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REPORT RESUMES

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AN EXPERIMENTAL EVALUATION OF PROGRAMED LEARNING,
MOTIVATIONAL CHARACTERISTICS OF THE LEARNER, HIS RESPONSES,
AND CERTAIN LEARNING OUTCOMES.
BY- DELLA-PIANA, GABRIEL M.
UTAH UNIV., SALT LAKE CITY
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DESCRIPTORS- *PROGRAMED INSTRUCTION, PROGRAMED TEXTS, TEACHING MACHINES, *MOTIVATION, STUDENT CHARACTERISTICS, COLLEGE STUDENTS, *LEARNING PROCESSES, *STUDENT REACTION, *RETENTION, EXPERIMENTAL PROGRAMS, PERFORMANCE FACTORS, TIME FACTORS (LEARNING), LEARNING LABORATORIES, SALT LAKE CITY, UTAH

THE EFFECTS OF TWO VARIABLES ON PROGRAMED LEARNING WERE INVESTIGATED--(1) MOTIVATIONAL DIFFERENCES AMONG LEARNERS AND (2) THE FORM OF THE LEARNER'S RESPONSE (CONSTRUCTING THE RESPONSE, COMPLETING THE RESPONSE WITH ONE OR MORE LETTERS OF THE ANSWER GIVEN, AND SIMPLY COPYING THE RESPONSE). THUS, DIFFERENT RESPONSE MODES IN TERMS OF THEIR RELATIVE EFFECTIVENESS FOR DIFFERENT KINDS OF LEARNING OUTCOMES WERE COMPARED, AND THE POSSIBILITY OF INTERACTION BETWEEN THE RESPONSE MODES AND MOTIVATIONAL LEVELS WAS EXPLORED. THE PROGRAM USED IN THIS STUDY WAS TITLED "AN INTRODUCTION TO COUNSELING." ABOUT 180 COLLEGE STUDENTS FROM A PSYCHOLOGY COURSE SERVED AS THE STUDY SAMPLE. EACH WAS RANDOMLY ASSIGNED TO TEACHING MACHINES THAT REQUIRED ONE OF THE THREE TYPES OF RESPONSE MENTIONED ABOVE. A FOURTH TREATMENT WAS USED, ALSO, WITH PROCTORS WHO GAVE RIGHT OR WRONG ANSWERS TO STUDENT RESPONSES. ACHIEVEMENT MOTIVATION, GRADE, AND INTELLIGENCE WERE USED AS CONTROL VARIABLES. EACH TREATMENT WAS EVALUATED THROUGH STUDENT TESTING ON A PRE-EXPERIMENTAL BASIS AND TWICE AGAIN AFTER THE SECOND AND SIXTH PROGRAMED LESSON. STUDY RESULTS SHOWED THAT THE EXPERIMENTAL RESPONSE PROGRAM WAS FAIRLY EFFECTIVE IN TERMS OF HIGH CORRECT RESPONSES. THE RESPONSE MODE VARIATIONS USED PRODUCED NO DIFFERENCES IN AMOUNT OF IMMEDIATE OR DELAYED RETENTION. MORE HIGHLY PROMPTED TREATMENTS SHOWED BETTER RESPONSE TIME WITH FEWER ERRORS IN LEARNING. FINDINGS SHOWED MOTIVATION DOES MAKE A DIFFERENCE IN PERFORMANCE WHEN USING THE CONSTRUCTED RESPONSE MODE. STUDENT EVALUATIONS OF THE USE OF THAT MODE WERE DIRECTLY RELATED TO STUDENT PERFORMANCE, AND PREFERENCE FOR THE MODE INCREASED WITH THE AMOUNT OF EXPERIENCE. (JH)

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An Experimental Evaluation of Programed Learning: Motivational Characteristics of the Learner, His Responses, and Certain Learning Outcomes

by

GABRIEL M. DELLA-PIANA

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University of Utah
Department of Educational Psychology

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Gabriel M. Della-Piana

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Department of Educational Psychology

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CHAPTER I

THE PROBLEM

There is little doubt that the research and development in preparation of curriculum materials stimulated recently by the work of B. F. Skinner (1954) (1958) will have a tremendous effect on practices in formal education. What we are not so sure of is the future form of the curriculum after this vigorous movement has interacted with other constructive forces in comtemporary education. Potentially, the development of programed learning could influence the role of the teacher and student, the development of new professional jobs in education, changes in marking practices and in grade level promotional policies, the amount and sequence of content in the curriculum, and in short, modifications in the entire curriculum. The study reported here is an investigation of the effect of two variables on the outcomes of programed learning: (a) motivational differences among learners and (b) the form of the learners response (constructing the response, completing the response with one or more letters of the answer given, and simply copying the response).

Plan of the Study

A programed learning sequence (following procedures used by B. F. Skinner) is a sequence of learning materials with seven major characteristics: 1. An active response is required from the learner; 2. Stimulus material is presented in short steps (frames) which insure correct responses; 3. Positive reinforcement is provided for correct responses (presumably by seeing that one's answer is correct); 4. The program moves from highly prompted frames which insure correct responses to unprompted terminal frames (criterion frames). The criterion frames and criterion behavior called for in these frames together define the objective to be attained by the programed learning sequence; 5. The movement from highly prompted initial frames to unprompted criterion frames follows a procedure of "reinforcing successive approximations to the final desired response", this procedure being largely characterized by calling for the criterion behavior in frames with successively fewer and fewer prompts; 6. Sufficient redundancy is built into the sequence to assure retention; 7. Sufficient variation is built into the nature of the frames (stimulus conditions for the desired response) and the responses called for so that responses learned have the desired generalizability.

Some research on each of these seven characteristics of programed learning is now underway throughout the country or has already been completed. As will be seen, the research presented here is relevant to several of the above characteristics.

The motivational variable.--There are two major questions asked about motivation: (a) to what extent are differences in learner motivation related to performance on our dependent variable measures? (b) to what extent does this relationship between learner motivation and learning outcomes differ in programed learning sequences calling for different types of response? We hypothesize that statistically (and perhaps practically) significant relationships will be found between learner motivation and task performance. Should such hypotheses be supported, then the educational significance is at once apparent. A more effective (efficient?) educational program would then involve exploring either the provision of other reinforcers (that is, reinforcers relevant to other learner motivation--reinforcers other than "seeing that one's answer is correct") or the manipulation of conditions that will increase the reinforcing value of "seeing that one's answer is correct". This study is expected to suggest more effective learning procedures by way of identifying some motivational variables that may be controlled or manipulated.

The learner response variable.--To what extent does the kind of learner response called for in a programed learning sequence influence performance on dependent variable measures?

Some research relevant to learner response variables used in this study has already been reported by others: Evans, Glaser, and Homme (September 1960), Goldbeck (September 1960) and Goldbeck and others (December 1960). These studies have made it apparent that material can be programed for more efficient learning by simply giving the answers to be read by the learner rather than requiring the learner to construct a response before showing him the correct answer. However, Evans and others (September 1960) found that their "reading" group took a longer time than the overt response group on immediate performance tests requiring constructed responses (but this difference disappeared a week later) and Goldbeck (September 1960) (December 1960) found that the "reading" group performance "not taking time into account" was bettered by the overt response group in material of greater difficulty (fewer cues). Studies of this type can help to clarify some of the conditions under which one method is superior to another.

The study reported here compared different response modes in terms of their relative effectiveness for different kinds of learning outcomes and also (as mentioned above) explored the possibility of interaction between response modes and motivational level.

CHAPTER II

DEVELOPMENT OF A PROGRAMED TEXT

The program used in this study is titled "An Introduction to Counseling". A complete copy of the program is presented in Appendix VII. This Skinnerian type program is a 280 frame revision of the program used by Faye Ellison in her master's thesis (1960) written under the direction of the writer and supported in part by a grant from the University of Utah Research Committee. We shall refer to Mrs. Ellison's version as the 1960-J (having been completed in January of that year) and the current version as the 1960-S (having been completed in September).

The 1960-S program was prepared in three separate formats but four different sets of booklets since one of the formats was used with two different treatments (one for each experimental treatment). The four experimental treatments are indicated by the numeral following the "S", and will be discussed in more detail in Chapter V.

1960-S1 has a Skinnerian format with blanks to be filled in. This form was used under two different experimental treatments (see 1960-S4 below). In Treatment 1, after the learner wrote his answer he turned the page and saw the correct answer.

1960-S2 was identical to S1, except that additional cues were included in the form of the initial letter(s) of the answer being presented in red. The student was then required to complete the word(s).

1960-S3 was also identical to S1 except that the entire answer was written in and the student was asked simply to read the item (until he felt he understood it) and copy the answer. Of course this form had no student errors since it involved copying only.

1960-S4 was identical to 1960-S1 in format but not in procedure for use. In 1960-S1 after a learner wrote his answer he turned the page and saw the correct answer. In 1960-S4, the learner gave his response orally and a proctor told him to go on if he was right and to keep trying if he was wrong. Details of this procedure will be discussed in Chapter V.

Program Objectives

A study of the tests in Appendices II, III, IV, and V reveals the nature of the behavior which the program was intended to produce. Appendix II consists of criterion frames from the program itself. These tests are discussed in the next chapter.

The content of the program was taken mainly from Porter (1950) and Perry and Estes (1953). Most of the counselor-client interchanges were contributed by Dr. Phelon J. Malouf who adapted them from the work of Porter (1950). With respect to Porter's categories of counselor responses (see the program, Panels for Lessons 3, 4, and 5) the program is intended to enable the learner to recall the categories, recognize them, analyze (or label) them in counselor-client interchanges (both those used in the program and some "new" interchanges), and produce them in written form when asked for. These same behaviors are expected for the four error-types in making "understanding" responses (see Panel for Lesson 7). The content taken from the Perry and Estes article is recorded mainly on the Panel for Lesson 2 and the corresponding lesson. Perry and Estes give a resolution of the directive-nondirective dilemma in education and therapy. The behavior expected in relation to this content is the ability to recognize when to shift from a nondirective approach to the more directive consultative type of "collaborative" approach by being able to recognize cues indicative of the client's readiness to make this shift.

Program Structure

There has been considerable activity in the specification of systematic procedures for developing programed learning sequences: Skinner (1958); Gilbert (1958); Glaser (September 1960) and Evans, Glaser and Homme (August 1960). Our program was written following the procedures outlined by B. F. Skinner (1958). However, the programing is uneven and while we can point to our criterion frames and to sequences exemplifying fading, prompting, etc., we did not follow rigorously a previously set standard of amount of review items, structure for fading, or types of prompts.

Since the program was written following a Skinnerian approach, one criterion of its effectiveness is the percent of correct responding within the program. The following table presents data on the three current forms of the program as well as on the Ellison form. The first lesson on the 1960-J form is labelled "X" so as to make the numbering parallel with the 1960-S. (In the 1960-S revision the first three lessons of the 1960-J form were condensed to two lessons).

Table 2.01

Percent Error for Each Lesson in Various Forms of the Program

	1960-J N=37	1960-S1 N=28	1960-S2 N=26	1960-S4 N=27
X	.159			
1	.154	.143	.089	.169
2	.126	.129	.070	.139
3	.062	.086	.022	.060
4	.110	.099	.048	.103
5	.085	.087	.013	.067
6	.114	.144	.064	.145
7	.102	.073	.013	.080
8	.079	.116	.018	.091
Average	.110	.110	.042	.107

In spite of the revision, the overall error rate did not change from the 1960-J to the 1960-S1 edition (both constructed reponse forms). However, there were some important differences in these two forms. As mentioned above, the first three lessons of the 1960-J form became two lessons in the 1960-S. This constituted a change from 315 to 280 frames and from 453 to 436 response blanks.

Another difference between the 1960-J and 1960-S1 forms is in the clarification and reduction of excessive errors on specific items. Thus, one of the most troublesome distinctions for students was between the "evaluative" and "interpretive" counselor responses. These terms, as defined by Porter, lend themselves to rather clear distinctions in tests of "recall of definitions", but not in tests of "classification of counselor responses". The 1960-S1 form did however show a reduction of error rate on items involving classification of interpretive and evaluative responses. Thus, note the following changes in error rates: Lesson 6, item 16 (first blank): 1960-J (64%), 1960-S1 (32%). Lesson 5, item 33: 1960-J (36%), 1960-S1 (14%). Lesson 5, item 14: 1960-J (14%), 1960-S1 (7%). The decreased error rate was due in part to changes in the counselor response to be classified (making it conform to a more clear case of the definition) and in part to revisions of the text in distinguishing the "interpretive" and "evaluative" categories. Yet, the distinction between evaluative and interpretive needs to be made even clearer. For example, looking at our criterion frames alone, we have a 12% overall error-rate in the 1960-S1 group. However, omitting a few items with the "evaluative--interpretive" distinction and an item on "structuring the situation", reduces the error rate to 5% on the criterion frames. It is the judgment of the writer that further improvement of this particular part of the program will require a redefinition of interpretive and evaluative. And this of course points up one of the advantages of evaluating programs, it aids in clarifying subject matter.

On the basis of an overall error-rate of 11% (in the constructed response form 1960-S1), the 5% error rate (excluding the items indicates above) on criterion frames calling for the desired response under a minimal cue situation, and the use of small steps and fading to get to the criterion frames, we may say that (as far as structure is concerned) the program we have is a fairly adequate Skinnerian program. Of course revisions are needed as indicated and the final test of adequacy is in the immediate and delayed retention measures outside of the programed learning sequence itself, in a test situation without the strong sequence prompts of a program.

CHAPTER III

THE TASK PERFORMANCE MEASURES

Task performance measures were taken within the program (i.e., during learning), immediately after completion of the program, and seventeen days after completion of the program.

Description of Within Program Measures

Errors and time scores were computed as task performance measures taken during learning.

Total Error (TE).--Since one treatment required only copying of the correct answer, there were no error scores for subjects in that treatment. For other treatments an error was counted for each blank in the program with an incorrect response or an omission of response. Thus, there may be more than one error for a given item in the program if there is more than one blank to be completed in that item. A response was counted as an error if the subject's answer was not the same as the keyed response or not judged to be correct by the scorer. With a 436-blank (280-item) program, the total possible error range was 0 to 436.

Since students marked their own responses as they went through the program, there occasionally were responses marked as errors by students and correct by the scorer and vice-versa. These instances were so rare that we arbitrarily followed the practice of using the examiner's judgment where there was a discrepancy. If there had been large discrepancies between student and scorer's judgments, we would have used two separate error scores since the errors perceived by the subjects could have different psychological significance for learning than errors not perceived by the subject but so judged by the scorer.

Total Time (TT).--Time (in minutes) for completion of the program was recorded by the learner. A clock was kept in the room and students recorded starting and stopping time on each lesson. Scorers performed the subtraction operation to determine time elapsed on each lesson and summed time over all lessons for each subject to determine the subject's total time score. Students were generally given as much time as they desired to complete each lesson. In a few cases students went over the class period (due to coming in late, or other reasons), but in all cases they were allowed to finish the lesson they were on according to the prescribed procedures.

Description of Post Program Measures

A test was developed with four separate sections yielding four subscores and a total score. Since these measures were administered immediately following completion of the program as well as seventeen days later, there is both an immediate (I) retention and delayed (D) retention measure for each score. Tables 3.01 and 3.02 present reliability data for scores obtained from the post program measures.

Criterion Frames Test (Cf).--This test is composed of items taken verbatim (or with only slight modification) from the learning program. Score is the number right. There are 38 blanks to be completed yielding a possible score range of 0 to 38. See Appendix II for a copy of the test. This test calls for recall and understanding of terminology and theory and for classification of counselor responses. The two scores obtained from this test, Cf-I and Cf-D, yielded reliabilities primarily in the 60's except for the Cf-I score in Treatment 4.

Recognition Test of Terminology and Theory (Rg).--This test consists of 35 multiple choice items covering essentially the same content as the criterion frames test excluding classification of counselor responses but with more emphasis on theoretical matter. Appendix III contains a copy of the test. Score is number right and therefore may range from 0 to 35. The two scores obtained from this test, Rg-I and Rg-D, yielded rather low reliabilities except for Treatment 2.

Test of Ability to Analyze Client-Counselor Interchanges (An).--This is a 25-item multiple choice test. Each item consists of a client statement and several possible counselor responses. The student is asked to identify a specified type of response (understanding, interpretive, evaluative, supportive, probing) or type of error in making an understanding response (content, language, depth, meaning), or to choose the most acceptable understanding response. This is called analysis behavior following Bloom's Taxonomy of Educational Objectives: Cognitive Domain (1956) since it involves the break down and labelling of certain elements of counselor responses according to several categories and since the client-counselor interchanges used in the test are presumably new to the subject.

There are three items calling for classification of each of the counselor response types, two items for each of the error-types and two items calling for classification of the most acceptable understanding response.

See Appendix IV for a copy of this test. Total score is number right and may range from 0 to 25. Very low reliabilities were obtained for the An-I and An-D scores obtained from this test.

Test of Ability to Synthesize or Compose Specified Counselor Responses (Syn).--This test consists of 15 client statements requiring the student to compose a specified type of counselor response. It is described as a 30-item test in the reliability section below since each counselor response to a client statement is scored as though it were two items. Thus, a score of 0 or 1 is given on the basis of whether or not the counselor response called for is given. Also, a score of 0 or 1 is given on the basis of whether the counselor response called for is given well and with predominant emphasis (see scoring guide below).

Two items are included for each major response type, one item for each error type, and one item calling for an acceptable understanding response. The behavior called for in this test is termed "synthesis" following Bloom's Taxonomy since it involves having the student produce a unique communication. However, this may be considered a rather low level of synthesis as defined in the Taxonomy since the characteristics of the final product are rather clearly specified. Each item was scored0, 1, or 2 with a total possible score of 30. The scoring guide follows:

0 - The response called for is not given.

1 - The response called for is given; however, another response type is also included with predominant emphasis in number of words or a very poor example of the called for response is given.

2 - The response called for is given well and with predominant emphasis.

A sample of 50 papers was scored independently by two persons. Interscorer agreement .96, the average algebraic difference between scorers was 1.08 raw score points and the average absolute difference was 1.50 raw score points. On 17 of the 50 papers there was no difference between scorers. The maximum difference between scorers was 5 points (out of a possible 30) and 6 of the 50 papers had differences of 4 or 5 points.

During the training period preceding scoring for inter-scorer agreement, a sample of ten papers was score independently by the same two persons and then the scoring system was discussed in relation to observed differences. There was a systematic difference between scorers. Of the 33 items showing interscorer differences, scorer A was consistently higher than scorer B on 26 of these items, and of the 7 items in which scorer B was higher the difference was only 1 point in 6 of them. After another training period all the papers in the entire experimental sample were scored by scorer A.

Scores Syn-I and Syn-D, obtained from this test yielded reliabilities generally in the 80's. There were two other scores obtained from the test, T-I and T-D referring to total test scores on the immediate and delayed test. The reliability of total test scores, of course, were the highest and together with the Syn-I and Syn-D scores were the only really satisfactory reliabilities obtained.

Table 3.01

Estimates of Kuder-Richardson Formula Number 20 Reliabilities on Immediate and Delayed Retention Measures.

Variable	Mean	K	S.D.	Range	Reliability[a]	Median
Treatment 1 (N=50)						
Cf-I	32.88	38	4.57	21-38	.656	33.83
Cf-D	31.34	38	5.25	15-38	.739	32.17
Rg-I	29.12	35	3.09	20-34	.307	29.30
Rg-D	28.44	35	3.43	13-34	.438	28.79
An-I	14.38	25	2.73	9-20	.366	14.21
An-D	15.14	25	3.00	8-20	.475	15.07
Syn-I	20.00	30	5.57	10-30	.817	18.50
Syn-D	19.34	30	5.68	6-29	.824	19.50
T-I	96.36	128	13.37	69-118	.865	96.17
T-D	94.30	128	14.28	59-117	.881	94.30
Treatment 2 (N=50)						
Cf-I	32.90	38	4.48	21-38	.642	33.83
Cf-D	32.38	38	4.49	19-38	.644	32.90
Rg-I	27.70	35	4.55	14-35	.680	28.64
Rg-D	27.60	35	4.22	17-35	.628	28.17
An-I	14.20	25	3.26	6-20	.555	14.30
An-D	14.58	25	3.30	8-22	.566	14.50
Syn-I	19.64	30	5.70	5-28	.825	21.30
Syn-D	19.94	30	5.76	7-29	.829	22.17
T-I	94.68	128	14.17	63-117	.880	96.50
T-D	94.68	128	15.42	54-120	.898	96.50

[a] Procedure for estimating reliability is Saupe's (1961) Formula 22. Specifically, $R^*_{20} = 1 \frac{-.086K}{Q^2}$, where K = number of items and $Q^2 = (.6745sd)^2$.

Table 3.02

Estimates of Kuder-Richardson Formula Number 20 Reliabilities on Immediate and Delayed Retention Measures.

Variable	Mean	K	S.D.	Range	Reliability[a]	Median
Treatment 3 (N=48)						
Cf-I	33.79	38	4.51	14-38	.647	35.00
Cf-D	32.69	38	4.02	18-38	.555	33.50
Rg-I	29.77	35	3.00	21-34	.265	30.17
Rg-D	29.17	35	2.63	25-34	.044	30.14
An-I	15.00	25	2.83	6-21	.410	15.06
An-D	14.71	25	2.67	6-20	.337	14.75
Syn-I	19.69	30	6.19	6-28	.852	21.50
Syn-D	20.21	30	6.09	6-30	.847	20.50
T-I	98.23	128	13.19	66-117	.861	98.50
T-D	96.88	128	12.06	61-116	.834	100.17
Treatment 4 (N=27)						
Cf-I	34.41	38	3.39	24-38	.375	35.17
Cf-D	33.44	38	4.60	22-38	.661	35.70
Rg-I	29.37	35	2.96	23-34	.245	29.75
Rg-D	29.63	35	2.51	25-34	.000	29.33
An-I	14.93	25	2.77	8-21	.384	15.25
An-D	15.67	25	2.97	10-20	.464	16.17
Syn-I	22.26	30	4.86	15-29	.760	22.30
Syn-D	19.26	30	5.24	7-26	.793	19.83
T-I	100.96	128	10.48	81-121	.780	100.50
T-D	98.00	128	11.90	70-117	.829	97.50

[a] Procedure for estimating reliability is Saupe's (1961) Formula 22. Specifically, $R_{20}^{*} = 1 \; \frac{-.086K}{Q^2}$, where K = number of items and $Q^2 = (.6745sd)^2$.

If we had done a better job of programing and a better job on content validity of our tests, we would probably have had even lower reliabilities. But this would simply be saying that we had accounted for the major characteristics of programs and learners determining variability in performance under the conditions of the study. The purpose of this study was to isolate characteristics of programs and learners determining variability in performance. We obviously needed some performance variability to get data relevant to these questions, and did obtain satisfactory variability on some of our dependent variable measures. It is interesting to note that the greatest variability in subtest performance was on the Syn-I and Syn-D scores, the test calling for composing counselor responses, a behavior which was not directly called for in the program.

Item Analysis of Post-Program Measures

Table 3.03 presents item analysis data based on immediate retention tests for a complete sample of subjects taken during fall quarter, 1960.

First, it is apparent that in the criterion frames test, given after completion of the program, performance has held up well without the sequence prompts of the program. There was a 12% error-rate reported in Chapter II on criterion frames within the program and there is about a 10% error-rate on the criterion frames given after completion of the program. Also, the median difficulty item on the Criterion Frames Test has 93.5% passing and only 2 items had fewer than 71% passing. The most difficult items ($p = 36\%$, $p = 47\%$) called for the terms "initiative" and "evaluation", which help to define "heuristic set" (see panel for L-2). The next items in difficulty (p's of 71%, 72%, 78%, 81%) called for definitions and classification of interpretive and evaluative responses. Thus, some of the major weaknesses noted within the program are still present on this post-program measure.

The difficulty with the interpretive-evaluative distinction also shows up in 7 of the 20 most difficult items on the Rg-I, An-I, and Syn-I tests. Another area of difficulty is in the classification (An-I) of the four error types. Producing these error types (Syn-I) did not appear to be as difficult.

The outstanding findings of the item analysis are that achievement was rather good on all tests, that the program was not as effective in getting subjects to be able to label "new" counselor responses and to produce specified counselor responses as it was in getting responses actually called for in the program, and that the tests pointed up the kinds of behaviors that need more effective programing. It is clear that many students are able to produce written counselor responses (of a specified type) even though they were not called on to do that in the program, but that more effective production of this behavior might follow actually calling for such responses in the program. This would obviously be difficult to program, but it is not impossible.

Intercorrelations Among Subtest Measures

As is indicated by Tables 3.04 to 3.07, the intercorrelations among subtests reveal a great deal of common variance. Putting this information together with the previously reported low reliabilities of most subtests, it seems clear that the use of subtest scores has doubtful utility. It seems quite likely that independence in measures such as those included in the present study will not be increased without a considerable differential emphasis on these subtest tasks in the learning program. At any rate, we see no reason to treat subtest score as separate measures in this study, and thus hereafter will treat the total test performance, immediate and delayed (T-I and T-D), as the major post-program dependent variable measures.

Table 3.03

Keyed Responses (K) and Item Aanlysis Data Showing Percent (P)
of Subjects Getting Each Item Correct (N = 108)

Dependent Variable Measure									
Cf-I			Rg-I		An-I		Syn-I		
K		P	K	P	K	P	K		P
L-8 (35)	probing	100	1 a	77	36 a	82	61	supportive	83
	understanding	100	2 a	99	37 b	63	62	understanding	75
	interpretive	100	3 c	93	38 d	19	63	interpretive	31
	evaluative	98	4 c	94	39 d	94	64	supportive	82
	supportive	99	5 a	98	40 b	15	65	probing	100
L-8 (34)	language	99	6 b	97	41 b	94	66	evaluative	73
	content	98	7 d	85	42 e	96	67	interpretive	56
	depth	100	8 b	90	43 e	94	68	evaluative	60
	meaning	96	9 a	35	44 b	70	69	probing	91
L-2 (32)	initiative	36	10 c	65	45 a	92	70	understanding	69
	evaluation	47			46 e	63	71	content	63
	dependent	94	11 d	96	47 d	29	72	language	81
	negativistic	87	12 c	96	48 c	64	73	depth	70
L-8 (1)	Rogerian	97	13 b	95	49 d	64	74	meaning	86
	Nondirective	99	14 a	89	50 c	32	75	acceptable understanding response	62
	Client-centered	93	15 d	74	51 e	56			
L-6 (3)	understanding	91	16 c	86	52 c	56			
L-8 (4)	content	92	17 a	37	53 b	68			
L-8 (7)	depth	91	18 b	44	54 b	44			
L-7 (16)	language	99	19 d	69	55 e	84			
L-8 (24)	meaning	86	20 a	81	56 e	72			
L-1 (9)	structuring	.83			57 a	30			
L-5 (32)	dependent	99	21 b	93	58 b	44			
L-6 (12)	supportive	94	22 d	93	59 d	21			
L-6 (11)	probing	100	23 c	97	60 d	22			

Table 3.03 (continued)

Dependent Variable Measure								
Cf-I			Rg-I		An-I		Syn-I	
K		P	K	P	K	P	K	P
L-6 (13)	understanding	93	24 a	87				
L-5 (21)	interpretive	81	25 b	96				
L-5 (15)	evaluative	72	26 c	86				
	to do	97	27 b	86				
L-8 (9)	depth	85	28 d	51				
L-7 (22)	language	93	29 b	92				
L-7 (5)	content	89	30 b	97				
L-8 (23)	meaning	85						
Panel for L-6	probing	100	31 c	70				
	understanding	84	32 a	89				
	interpretive	71	33 c	93				
	evaluative	78	34 d	91				
	supportive	95	35 d	73				
Median P		93.5		89.5		63.5		73.0

While for tests Rg-I and An-I the item numbers and the letters of the correct alternatives are given, and for Cf-I the item number (lesson number and frame number) and actual correct responses are given, for Syn-I we simply indicate the type of counselor response that the learner was asked to produce in writing, rather than the actual answer. See Appendices II, III, IV, and V for complete copies of the tests.

Table 3.04

Intercorrelations Among Subtest Scores and Total Score

Treatment 1 (N = 50)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Cf-I		65	70	41	57	49	63	54	88	66
(2) Cf-D			43	46	49	58	56	56	65	83
(3) Rg-I				73	55	54	55	61	81	69
(4) Rg-D					41	44	44	50	58	71
(5) An-I						50	53	59	75	63
(6) An-D							64	65	66	80
(7) Syn-I								79	86	77
(8) Syn-D									77	87
(9) T-I										83
(10) T-D										

Table 3.05

Intercorrelations Among Subtest Scores and Total Score

Treatment 2 (N=50)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Cf-I		60	43	28	28	45	44	40	70	51
(2) Cf-D			60	64	46	56	51	59	70	82
(3) Rg-I				83	48	61	54	65	78	78
(4) Rg-D					54	63	54	68	69	86
(5) An-I						75	76	54	76	67
(6) An-D							77	72	81	84
(7) Syn-I								77	87	76
(8) Syn-D									78	88
(9) T-I										88
(10) T-D										

Table 3.06

Intercorrelations Among Subtest Scores and Total Score

Treatment 3 (N=48)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Cf-I		63	55	50	46	55	41	36	76	62
(2) Cf-D			53	49	37	38	43	39	62	72
(3) Rg-I				62	55	50	55	54	79	68
(4) Rg-D					42	52	58	54	67	76
(5) An-I						62	55	41	76	55
(6) An-D							60	57	71	75
(7) Syn-I								85	85	82
(8) Syn-D									73	86
(9) T-I										86
(10) T-D										

Table 3.07

Intercorrelations Among Subtest Scores and Total Score

Treatment 4 (N=27)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Cf-I		44	49	51	40	30	36	47	73	56
(2) Cf-D			52	34	54	42	06	34	46	71
(3) Rg-I				74	37	48	42	50	74	69
(4) Rg-D					38	44	61	55	76	69
(5) An-I						65	40	67	68	75
(6) An-D							50	68	64	80
(7) Syn-I								69	80	58
(8) Syn-D									79	86
(9) T-I										84
(10) T-D										

CHAPTER IV

OTHER VARIABLES

Measures of motivational, ability, and achievement variables which may be expected to be associated with task performance were taken before and during the experiment and are discussed below.

Grade Point Average (GPA)

University files were searched for a cumulative grade point average for all students in the sample. All students were also asked for their own report on GPA. There was not much discrepancy between university records and student reports. In a few cases (transfers) we had only the student's report and used it. The GPA scale ranges from 4.0 (A) to 0.0 (E). It is apparent from Table 4.02 that the obtained F is not significant and that we may consider our treatment means on GPA as estimates of a common population mean.

Table 4.01

Means, Sigmas, and Ranges for All Treatments on GPA

	Treatments			
	I (N=50)	II (N=50)	III (N=48)	IV (N=27)
Mean	2.69	2.62	2.77	2.73
Sigma	.53	.55	.60	.62
Range	1.7 - 3.7	1.8 - 3.7	1.1 - 3.7	1.9 - 3.8

Table 4.02

Analysis of Variance for Treatments on Grade Point Average

Source of Variation	Sums of Squares	d.f.	Mean Square	F
Between	.58	3	.19	...
Within	56.00	171	.33	
Total	56.58	174		

American Council on Education Psychological Examination (ACE)

Linguistic (L), Quantitative (Q) and Total (T) scores were obtained on the ACE (1954 edition for college freshmen) for all subjects previous to experimental treatment. Results are presented in Tables 4.03 and 4.04. It is apparent that differences among treatments are not significant on these variables except for the ACE Q score.

Table 4.03

Means, Sigmas, and Ranges for all Treatments on ACE-L, ACE-Q, and ACE-T Scores

	Treatments			
	I (N=50)	II (N=50)	III (N=48)	IV (N=27)
		ACE--L		
Mean	69.98	68.96	71.35	72.67
Sigma	14.66	11.84	13.28	16.61
Range	32-100	39-94	37-95	38-103
		ACE--Q		
Mean	38.90	37.36	39.17	41.78
Sigma	8.39	11.23	8.94	10.52
Range	16-57	14-72	17-58	22-65
		ACE--T		
Mean	109.48	106.30	110.54	114.44
Sigma	18.48	19.80	20.71	23.59
Range	60-145	71-155	69-152	71-166

Table 4.04

Analysis of Variance for Treatments on ACE-Q, ACE-L, and ACE-T Scores

Source of Variation	Sums of Squares	d.f.	Mean Square	F^a
		ACE--Q		
Between	1344.55	3	448.18	5.02
Within	15265.36	171	89.27	
Total	16609.91			
		ACE--L		
Between	293.80	3	97.93	...
Within	32861.88	171	192.17	
Total	33155.68			
		ACE--T		
Between	1221.29	3	407.10	...
Within	70567.57	171	412.68	
Total	71788.86			

[a] For 3 and 171 degrees of freedom an F of 3.90 is required for significance at the .01 level.

Semantic Differential Measures of Motivation

Description of the measures.--A number of different intrapersonal measures were obtained by use of Osgood's (1957) semantic differential technique for the measurement of meaning. This technique consisted of having the students rate "concepts" on a series of bipolar adjective scales. The scales used are listed below. The first ten scales were selected because of high rotated factor loadings (loading follows item) on Osgood's Factor I "Evaluation" (Osgood, 1957, p. 37). The remaining two scales were selected because of relevance to the present study (Osgood, 1957, p. 79).

1. good - bad (.88)
2. sweet - sour (.83)
3. clean - dirty (.82)
4. tasty - distasteful (.77)
5. valuable - worthless (.79)
6. kind - cruel (.82)
7. pleasant - unpleasant (.82)
8. sweet - bitter (.80)
9. nice - awful (.87)
10. fair - unfair (.83)
11. interesting - uninteresting
12. easy - difficult

The concepts that were judged on each of these scales are listed below. The first four concepts refer to method which constitute the different treatments in this study. Students were asked both before and after the experimental treatment to judge the methods (see Procedures in Chapter V). The remaining concepts were included because of their relevance as motivational measures when judged on the evaluative scales.

1. Method I
2. Method II
3. Method III
4. Method IV
5. The content of the material studied
6. Studying alone
7. Studying hard
8. Getting good grades

A copy of the semantic differential instrument used in this study is in Appendix VI. It will be noted that we used Osgood's Form II (1957, p. 81) which he found to yield no different results than Form I while being more satisfying to the subject and more convenient for scoring.

In view of the number of comments of students concerning the irrelevance of scales such as "sweet-sour" and "clean-dirty" as applied to methods, it would seem desirable in the future to experiment with a variation from Osgood's instructions (1957, p. 82f) to the extent of including an explanation of the nature of the "connotative meaning" that is called for.

The scores derived from these judgments of concepts on the adjective scales are listed below. All these variables involve a judgment by a subject of a concept on a scale(s) at a certain point of time during the experiment. Judgments were made on 7-point bipolar adjective scales. A person's score was the scale position judged (where only one scale was used) or the average scale position (in the case of the ten evaluative scales). Scale values ranged from seven (for the good, interesting, easy, end of the scale) to one (for the bad, uninteresting, difficulty end of the scale). Because of the uniformity of the description of these variables we shall simply give an abbreviated symbol for each variable and indicate what concept was judged on what scale(s) at what time during the experiment.

EvM-pre.--This was a judgment by the subject before beginning the eight lessons of the experimental program. In order to get a measure of each subject's preference for each method, we had them go through two lessons of a prepublication form of Skinner's learning program on *The Analysis of Behavior* (Holland and Skinner, 1961) for each of our methods. Then we asked subjects to judge each method on the semantic differential. However, variable "EvM-pre" is a judgment on the ten evaluative scales of *the* method to which the subject was finally assigned. As may be seen in Table 4.08 there were no significant differences among treatments on any of the pre-experimental semantic differential scores.

InTM-pre.--This variable was based on a pre-experimental judgment by the subject, on the interesting-uninteresting scale, of the method to which the subject was finally assigned.

DfM-pre.--This variable is the subject's pre-experimental judgment on the easy-difficult scale, of the method to which he finally was assigned.

EvSa-pre.--This variable is the subject's pre-experimental judgment on the ten evaluative scales, of the concept "studying alone."

IntSa-pre.--This variable is the subject's pre-experimental judgment on the interesting-uninteresting scale, of the concept "studying alone".

DfSa-pre.--This variable is the subject's pre-experimental judgment on the easy-difficult scale, of the concept "studying alone".

EvSh-pre.--This variable is the subject's pre-experimental judgment on the ten evaluative scales, of the concept "studying hard".

IntSh-pre.--This variable is the subject's pre-experimental judgment on the interesting-uninteresting scale, of the concept "studying hard".

DfSh-pre.--This variable is the subject's pre-experimental judgment on the easy-difficult scale, of the concept "studying hard".

EvG-pre.--This variable is the subject's pre-experimental judgment on the ten evaluative scales, of the concept "getting good grades".

IntG-pre.--This variable is the subject's pre-experimental judgment on the interesting-uninteresting scale of the concept "getting good grades".

DfG-pre.--This variable is the subject's pre-experimental judgment on the easy-difficult scale of the concept "getting good grades".

EvM-2.--This was an evaluative judgment by a subject, after lesson two, on the ten evaluative scales, of the concept "method to which you were assigned".

InTM-2.--This was a judgment of interest by the subject, after lesson two, on the interesting-uninteresting scale, of the concept "method to which you were assigned".

DfM-2.--This was a judgment by the subject, after lesson two, on the easy-difficult scale, of the concept "method to which you were assigned".

EvM-6.--This was a judgment by the subject, after lesson six, on the ten evaluative scales, of the concept "method to which you were assigned".

IntM-6.--This was a judgment by the subject, after lesson six, on the interesting-uninteresting scale, of the concept "method to which you were assigned".

DfM-6.--This was a judgment by the subject, after lesson six, on the easy difficult scale, of the concept "method to which you were assigned".

EvC-2.--This was a judgment by the subject, after lesson two, on the ten evaluative scales, of the concept, "content of material studied".

IntC-2.--This was a judgment by the subject, after lesson two, on the interesting-uninteresting scale, of the concept, "content of the material studied".

DfC-2.--This was a judgment by the subject, after lesson two, on the easy-difficult scale, of the concept, "content of the material studied".

EvC-6.--This was a judgment by the subject, after lesson six, on the ten evaluative scales, of the concept, "content of the material studied".

IntC-6.--This was a judgment by the subject, after lesson six, on the interesting-uninteresting scale, of the concept, "content of the material studied".

DfC-6.--This was a judgment by the subject, after lesson six, on the easy-difficult scale, of the concept, "content of the material studied".

Reliability of semantic differential measures.--Reliability data was not gathered in the present study for these measures; however, relevant data is available from the work of Osgood and others (1957, pp. 126f). In Osgood's original factorial study (1957, pp. 33f) 40 items were repeated at the end of his form. On the eleven evaluative scales included in that study, the average absolute deviations in scale units, on 100 subjects, was .48 in this immediate retest procedure. A study by Bopp (Osgood, 1957, p. 130f) yielded an immediate retest average absolute deviation of .24 and a delayed (two week interval) test-retest average deviation of .37 for a group of 40 normals judging eight concepts on 13 scales.

In a study of factor score reliability (Osgood, 1957, p. 138f) we find that on the evaluative factor, for 112 subjects whose retests occurred within 30 minutes that "a change in factor score of more than 1.00...is significant at about the five percent level" on the grounds that deviations this large occur only this proportion of the time. It is, of course, factor score reliability on the evaluative factor that concerns us since the individual's score on these scales is the average of ten evaluative judgments for a given concept. For groups of subjects, there is an even greater stability of scores. Thus, the probability of obtaining a shift of only about .4 scale units is about .05 on factor scored items for groups of subjects. This latter data then has to do with reliability of concept meanings for groups (reliability of group mean scale position on a concept) as contrasted with the former data applying to factor scored items for individual subjects (reliability of individual mean scale position on a concept).

Thus, though it would have been desirable to obtain reliability data on scale judgments on subjects and concepts used in the present study, we do have evidence of reliability for these scales with other subjects and concepts and we have probability values for deviations of individual factor scores and group factor scores.

Intercorrelations and correlations with ACE-L.--The meaning of the semantic differential scores may be made clearer in part by showing their intercorrelations and correlations with the ACE-L measure. In this section we will limit ourselves to the semantic differential scores based on the evaluative scales since these are the only scales, yielding factor scores and since the other two scales generally did not yield as much variability and would have limited use for correlational purposes (although this does not preclude our using them for other purposes).

Table 4.07 summarizes the relevant data on the above mentioned correlations. We will make a summary observation of the data in this Table and return toit later for further discussion. It will be noted that the semantic differential scores (scores 2 through 9) are generally significantly intercorrelated, but not significantly correlated with linguistic ability (score 1, ACE-L). Exceptions to this summary statement will be discussed in the Results chapter.

Table 4.05

Intercorrelations of Semantic Differential Scores and ACE-L Scores

Treatment I (N=50)

Score	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 ACE-L	69.98	14.66		.11	-.03	-.07	.01	.05	-.02	.04	-.01
2 EvM-pre	4.81	1.44			.04	.05	.03	.36	.33	.37	.25
3 EvSa-pre	5.52	.83				.69	.49	.51	.53	.45	.54
4 EvSh-pre	5.40	.87					.26	.45	.45	.35	.40
5 EvG-pre	6.08	.74						.25	.27	.18	.29
6 EvM-2	4.96	1.28							.57	.65	.60
7 EvC-2	5.44	.82								.70	.83
8 EvM-6	5.27	.96									.85
9 EvC-6	5.40	.87									

Treatment II (N=50)

Score	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 ACE-L	68.96	11.84		-.15	.15	.07	.03	-.02	.05	-.04	.06
2 EvM-pre	5.02	.92			.16	.22	.45	.48	.28	.42	.36
3 EvSa-pre	5.16	.81				.82	.49	.47	.46	.46	.29
4 EvSh-pre	5.23	.79					.15	.33	.48	.46	.29
5 EvG-pre	5.97	.79						.37	.48	.51	.46
6 EvM-2	5.17	.96							.65	.65	.65
7 EvC-2	5.49	.81								.53	.74
8 EvM-6	5.23	.84									.64
9 EvC-6	5.45	.81									

With N = 50 an r of .24 is required for significance at the .05 level.

Table 4.06

Intercorrelations of Semantic Differential Scores and ACE-L Scores

Treatment III (N=48)

Score	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 ACE-L	71.35	13.28		.04	-.25	-.25	-.22	-.24	-.40	-.33	-.27
2 EvM-pre	4.63	1.26			.11	.29	.21	.46	.39	.47	.55
3 EvSa-pre	5.44	.88				.71	.46	.29	.61	.35	.35
4 EvSh-pre	5.23	.81					.57	.30	.45	.41	.26
5 EvG-pre	5.95	.94						.26	.36	.40	.33
6 EvM-2	4.25	1.26							.43	.73	.59
7 EvC-2	5.35	.76								.57	.74
8 EvM-6	4.64	1.23									.75
9 EvC-6	5.44	.83									

Treatment IV (N=27)

Score	Mean	S.D.	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1 ACE-L	72.67	16.61		.05	.17	.17	-.12	-.09	.03	-.35	-.33
2 EvM-pre	5.20	.68			.61	.48	.30	.46	.21	.44	.19
3 EvSa-pre	5.43	.72				.73	.35	.04	.00	.03	.01
4 EvSh-pre	5.20	.80					.23	.10	.00	.06	.02
5 EvG-pre	6.13	.64						.27	.04	.37	.45
6 EvM-2	4.28	1.29							.59	.86	.63
7 EvC-2	4.94	.74								.38	.57
8 EvM-6	4.81	1.12									.79
9 EvC-6	5.18	.72									

With N = 48 an r of .24 is required and with N = 27 an r of .32 is required for significance at the .05 level.

Comparisons of means among treatments.--The final question concerning the semantic differential measures that we shall raise in this chapter is that of whether we may consider treatment means as estimate of a common population mean. Means and sigmas for these scores are presented above in Table 4.07 with the intercorrelations. Data relevant to an analysis of variance are presented in Tables 4.08 and 4.09 below.

As may be seen in Table 4.08, none of the pre-treatment semantic differential scores yielded significant differences among means. However, significant differences among treatment means do exist on the EvM-2 and EvM-6 scores reported in Table 4.09. Apparently, the treatments themselves shifted some of the judgments of the methods used by the student. Referring back to Table 4.07 we find that the largest difference among treatments on the EvM-pre score was .57 (Treatments 3 and 4) and on the EvM-2 score moved to .92 (Treatments 2 and 3).

Again looking back at Table 4.07 we find even more interesting data. Thus, looking at the changes within treatments on three scores (EvM-pre, EvM-2, EvM-6) we find the following:

1. Recall that in dealing with a factor score for a group a shift of .4 scale units is significant at about the .05 level (i.e., deviations this large occur only this percent of the time).

2. In Treatment 1, the shift from EvM-pre to EvM-6 was .46, or in other words significant and in the positive direction. This treatment ended up with the highest evaluative judgments by students and the greatest shift in a positive direction. This, you may recall, is the straight Skinnerian method.

Table 4.07

Analysis of Variance for Treatments on Semantic Differential Scores[a]

Source of Variation	Sums of Squares	df	Mean Square	F[b]
EvM-pre				
Between	6.9	3	2.3	1.8
Within	229.5	171	1.3	
Total	236.4			
EvSa-pre				
Between	4.2	3	1.4	2.1
Within	114.8	171	.67	
Total	119.0	174		
EvSh-pre				
Between	1.1	3	.37	.55
Within	114.8	171	.67	
Total	115.9	174		
EvG-pre				
Between	.8	3	.27	.42
Within	110.4	171	.65	
Total	111.2	174		

a. These scores are actually computed on a scale of 1 to 7 where 1 = good and 7 = bad. However, in other portions of the study we revised the scoring to facilitate talking about correlations in a way that a high score on the semantic differential would mean a "good" judgment and a low score a "bad" judgment on the evaluative scales. Data used for this analysis was computed such that a high score signified a poorer or lower evaluation (of method, content, etc.) than a lower score.

b. For 3 and 171 degrees of freedom an F of 3.90 is required for significance at the .01 level and 2.66 for significance at the .05 level.

Table 4.08

Analysis of Variance for Treatments on Semantic Differential Scores[a]

Source of Variation	Sums of Squares[a]	df	Mean Square	F[b]
	EvM-2			
Between	28.4	3	9.5	6.8
Within	243.5	171	1.4	
Total	271.9	174		
	EvC-2			
Between	5.9	3	2.0	3.2
Within	106.2	171	.62	
Total	112.1	174		
	EvM-6			
Between	15.9	3	5.3	4.8
Within	182.9	171	1.1	
Total	198.8	174		
	EvC-6			
Between	1.6	3	.53	.78
Within	115.7	171	.68	
Total	117.3	174		

a. These scores are actually computed on a scale of 1 to 7 where 1 = good and 7 = bad. However, in other portions of the study we revised the scoring to facilitate talking about correlations in a way that a high score on the semantic differential would mean a "good" judgment and a low score a "bad" judgment on the evaluative scales. Data used for this analysis was computed such that a high score signified a poorer or lower evaluation (of method, content, etc.) than a lower score.

b. For 3 and 171 degrees of freedom an F of 3.90 is required for significance at the .01 level and 2.66 for significance at the .05 level.

3. In Treatment 2 there are no significant shifts from EvM-pre to EvM-6 although the two shifts reported are in the favorable direction.
4. For Treatment 3 there was a significant unfavorable shift from EvM-pre to EvM-2, but this disappeared when we look at EvM-pre to EvM-6.

5. In Treatment 4 (originally the highest favorable judgment) we find a highly significant shift in the unfavorable direction from EvM-pre to EvM-2 and this shift remains significant from EvM-pre to EvM-6.

This analysis of shifts in preference is not easily interpretable statistically because of problems of test ceiling and possible differences among individuals' uses of the scales. Nevertheless, the trends are probably quite reliable. Shifts in treatment preference have occurred after experience with the treatment. Some are in the positive direction and others in the negative direction. The Skinner method (Treatment 1) yielded the most favorable final evaluation and the highest favorable shift. Certainly it will be interesting to look at treatment differences in dependent variable measure, adjusted for differences on the EvM-2 and EvM-6 scores.

Within Program Time and Error Scores

The time on each lesson and the number of errors on each lesson were recorded as indicated in the presentation of procedures. Since Treatment 3 (merely copying the correct answers) would not yield error scores it is omitted from within program error analysis. Means and sigmas for time and errors are presented in Table 4.10 and analysis of variance results in Table 4.11. Since both time and error scores yielded large significant differences among treatments they will be treated in Chapter V on the analysis of data.

Table 4.09

Means and Sigmas for Total Time on Program

	Treatments			
	I	II	III	IV
Mean	198.8	149.5	148.9	231.7
Sigma	48.8	36.7	39.0	48.7

Means and Sigmas for Total Errors on Program

	Treatments		
	I	II	IV
Mean	47.48	20.50	47.04
Sigma	27.44	10.99	19.33

Table 4.10

Analysis of Variance for Treatments on Within Program Time and Error Scores

Source of Variation	Sums of Squares	df	Mean Square	F[a]
	Total Errors			
Between	21,816.9	2	10,908.4	25.7
Within	52,544.0	124	423.7	
Total	74,360.9	126		
	Total Time			
Between	180,301.4	3	60,100.5	34.0
Within	301,976.3	171	1,765.7	
Total	482,277.7	174		

a. For 3 and 171 degrees of freedom an F of 3.90 is required for significance at the .01 level. For 2 and 124 degrees of freedon an F of 4.78 is required for significance at the .01 level.

CHAPTER V

THE COLLECTION AND ANALYSIS OF DATA

Many aspects of procedure for data gathering have of course already been described in previous chapters. In this chapter we shall summarize our procedures and report our results. All tables in this chapter are presented at the end of the chapter.

Summary of Procedures of the Study

After development and preparation of the instruments and the learning program as described above data was gathered according to the following procedures:

Sample.--Students in three sections of a course entitled "Psychology for Secondary School Teachers" were used as subjects. Most of the students were college juniors. The experimental program was administered at the beginning of two consecutive quarters and the two instructors involved worked together in administering and proctoring the experiment. The total number of subjects enrolled was approximately 230. Twenty-seven were used as proctors. The final sample consisted of 175 students. The remaining 30 or so students were not used because they did not complete all post-test measures due to their inclusion in another study during that quarter. Thus, the sample of students was rather complete, those excluded being done on a random basis. As indicated in Cahpter IV there were no significant differences among means in different treatments on grade point average and the American Council on Education Psychological Examination (Scores L and T) although differences did show up on the ACE-Q score.

Treatments. Students were randomly assigned to treatments and a few cases were then intentionally shifted to avoid wide discrepancies in GPA and total ACE scores. Students in each class were assigned to one of the four experimental treatments rather than having each class serve as a treatment. The reason for this type of assignment was to avoid teacher differences even though in practice the treatments came at the beginning of the quarter and both instructors and an assistant worked together in proctoring. The treatments as described in Chapter II are summarized here.

Treatment I (N=50). The program was administered in the form included in Appendix VII. The student was asked to read the item (or frame) write his answer on a separate sheet, then turn the page to find the correct answer. If his answer was different than the keyed answer, he was instructed to put an X on his answer sheet by his incorrect response (unless he perceived it to be an acceptable synonym). He then went on to the next item. Students were limited to one lesson a day. They were asked to record beginning and ending time. After completing a lesson students were instructed to go back over items missed. If on the second try they still missed some items, they were asked to repeat again. Only three trials on missed items were allowed.

Treatment 2 (N=50). The program was administered in the same form as in Appendix VII except that the initial letter(s) of the response called for was printed in the program in red. Thus, the student was then required to complete the response on his answer sheet. Otherwise, this treatment was the same as Treatment 1.

Treatment 3 (N=48). The program was also identical to Appendix VII for this treatment except that the entire response called for was included in the program in red and the student was simply required to copy the response. Obviously, this made it unnecessary to check the answer or to repeat incorrect items since no errors were made. Except for these major differences, this treatment was the same as Treatments 1 and 2.

Treatment 4 (N=27). The program form in Appendix VII was used exactly as shown there for this treatment. Thus, Treatment 4 used the same form of program as Treatment 1 but it was used in a different manner. In the present treatment the student silently read the item and wrote his response just as in Treatment 1. However, after writing his response, he received from a student proctor seated by him either a "Right" or "Wrong, try again". He continued in this manner, trying again on each item missed until he got it right or until he had made three trials (whichever came first). If the student said he didn't know the answer, the proctor responded "try the best you can anyhow". This got most students responding. In a few cases on very few items a student quit responding before three errors and before getting it right. In these cases, the proctor was told to give the answer. A record of time and responses was kept for this group in the same manner as for the above treatments.

Several students were absent for a day or two. However, in all these cases but one, the students came in to make up the session missed. This spaced practice a little differently for these few students. In all treatments students were told to work as rapidly as they could and still do careful work. A large clock was in the room to allow recording of time. Proctors (instructors) kept a close watch for errors in procedure, particularly at the beginning of the program. Procedures were well established, however, by the preliminary program described below.

Pre-experimental testing procedures.--Before assignment to experimental treatments students were administered the ACE test, a work sample program, a self report inventory of achievement motivation and the semantic differential measures. The self report test is included in Appendix I but no data is reported on it because of errors in administration. This test was adapted from Mitchell (1960) but unfortunately could not be used in our data analysis.

For adaptation to procedure, and for purposes of obtaining evaluative judgments of the treatments, each student was required to go through each experimental treatment using two lessons for each treatment. The program used was the first eight lessons of a prepublication form of the Holland-Skinner Analysis of Behavior (1961). Following the completion of each pair of lessons for each treatment, students were required to judge the method using the semantic differential scales included in Appendix VI. In addition, several other concepts (Studying alone, Studying hard, Getting Good Grades) were also judged, previous to going through the Holland-Skinner program. Judgments of method and content of the material were also obtained after the second and sixth lessons in the experimental program.

Post-treatment testing.--Testing required two days after completion of the program. Tests were administered in the order listed in the Appendix. Also, the tests were repeated as delayed retention measures 17 days following the post-treatment test.

Results

Some results of the study have already been reported above in connection with the discussion of measures used in the study and in the discussion of the learning program. Results reported here will be discussed under the two major independent variables of the study: the learner response variable and motivational variables.

The learner response variable.--We expected that differences among treatments in the kind of learner response called for in the programed learning sequence would produce differences among treatments on dependent variable measures.

One question that we were not able to answer in our study of the learner response variable was that concerning the interaction between learner response (our treatments) and types of learning outcomes (subtest scores on dependent variable measures). We could not carry out the indicated analysis because of low reliability of subtest scores together with only moderate independence of scores. Thus, we are limiting our analysis to only the Total Immediate (T-I) and Total Delayed (T-D) retention measures.

Tables 5.01 and 5.02 present data bearing an hypotheses concerning learner response variables (i.e., treatment differences). These data are discussed under 1 and 2 below.

1. Treatment differences on Total Immediate (T-I) and Total Delayed (T-D) Retention.--As indicated in Table 5.01 we did not find significant differences among treatments on either the immediate or delayed total retention measures. Since we have already demonstrated the low error rate in our program (as well as in post-program measures), our finding is consistent with the Evans, Glaser and Homme (1960) hypothesis that "The relevance of...response mode..is inversely related to the probability of correct responding." In other words, when one

constructs an effective program there is little variability in performance and what little variability there is cannot be accounted for by the kinds of program differences introduced in our treatments. Going beyond the data, it appears that Skinner (1954) was correct in his contention that "the necessary techniques are known" for effective programing. However, while short programs can be constructed effectively for the kind of learning outcomes we have been measuring thus far, it is likely that other significant programing variables will arise as we attempt to construct longer programs for a variety of learning outcomes over varying retention periods.

2. Treatment differences on Total Immediate (T-I) and Total Delayed (T-D) Retention adjusted for within program differences in Total Time (TT) and Total Errors (TE).--Summarizing results of time and error variables in relation to retention we found that:

a. Errors within the program were significantly negatively correlated with the T-I and T-D retention measures in Treatments 1, 2, and 4. (No errors in Treatment 3 since it involved only copying (see Table 5.02).

b. Mean total errors in Treatment 2 were significantly lower than errors in Treatments 1 and 4 (refer back to Tables 4.10 and 4.11

c. Time on the program was negatively correlated with T-I and T-D retention measures in Treatments 1 and 4 but not in Treatments 2 and 3 (see Table 5.02).

d. Mean total time on the program was greater in Treatments 1 and 4 than in Treatments 2 and 3 (refer back to Tables 4.10 and 4.11).

e. Applying Kramer's extension of Duncan's Multiple Range Test (Kramer, 1957) on the results of covariance analysis we found that Treatments 2 and 3 were significantly more *efficient* in terms of the criterion of achievement (T-I and T-D retention) per unit of time and error (see Table 5.01).

The results reported above under 1 and 2 are consistent with results obtained in most studies using a Skinnerian program. The next section deals with the motivational variables.

The motivational variables.--The expected relationships between our motivational measures and our dependent variable measures were based on some assumptions concerning the effect of motivation on "reinforcement". Our motivational measures, it may be recalled, were evaluative judgments (in Osgood's evaluative scales) of the following concepts: "method (or treatment) to which you were assigned, content of the material, studying alone, studying hard, and getting good grades. These judgments are assumed to be indicative of either a general achievement motivation or motivation for the specific task or content in the experiment. We have assumed that students high in such motivation would more likely be reinforced by "seeing that one's answer is correct" than students lower in such motivation and consequently that these motivational measures would generally be significantly and positively related to achievement. However, since getting the correct answer in Treatments 2 and 3 (highly prompted treatments) was so simple, it was expected that the reinforcement value of "seeing the right answer" would be decreased and that consequently there would be a lower if not nonsignificant relationship between motivation and achievement in those treatments.

1. Correlational analysis.--It was expected that correlations between motivational measures and dependent variable measures would be consistent with the assumptions discussed above. The data in Table 5.03 are relevant here. For evaluations of "studying alone," "studying hard" and "getting good grades," there were no significant correlations with T-I and T-D retention. In Treatment 4, evaluation of "studying alone" was significantly negatively correlated with T-I retention. This of course was in the expected direction since Treatment 4 subjects worked with a proctor who told them "right" or "wrong" upon seeing the students' responses. Many students complained fiercely about doing so poorly in this situation; presumably, because they were observed rather than because they really did poorly. In Treatment 4 "studying hard" is significantly correlated with T-I retention. In Treatment 3 "studying hard" is negatively correlated with T-D retention and "getting good grades" is correlated with T-I retention. It seems reasonable that students who value studying hard would not be reinforced by "seeing the correct answer" in Treatment 3 since the response was a simple copying task. The same explanation makes sense for those who valued "getting good grades."

Variables in Table 5.03 represent evaluations of the method (treatment) to which one was assigned. These evaluations were made before the experiment, after the second lesson, and after the sixth lesson (of 8 lessons). In Treatment 1 the correlation between motivation and T-I and T-D retention are positive and significant for variables 5 and 6, but not for variable 7. Thus, judgment of the treatment (program method) was significantly correlated with post-treatment achievement when considering pre-treatment judgments and judgments after the second lesson, but not when considering judgments after the sixth lesson. Looking back at Table 4.07 we see that EvM-6 went up significantly and that the variance decreased. Thus, the picture of the relation between evaluation of a treatment and post-treatment achievement is quite clear for Treatment 1. Evaluation of the treatment goes up with experience in the treatment and the treatment evaluations are significantly correlated with achievement.

The only other significant correlations in Table 5.03 are in Treatment 3 between both T-I and T-D retention and the subjects' evaluations of the treatment after Lesson 6. This is a difficult correlation to explain. Some relevant data is that the correlation pre-experimental evaluation of the treatment and evaluation after Lesson 2 is .46, but it is a .73 between the Lesson 2 evaluation and the Lesson 6 evaluation. Thus, it appears that one's judgment of the method remains relatively stable from the second to the sixth lesson. A plausible explanation for the negative correlation is that those who rated Treatment 3 favorably had interfering emotional responses on the post-tests due to their not being able to produce the answer immediately. At least this interpretation is consistent with other experiments showing that the amount of achievement in a "reading" treatment was as good as in a "constructed response" treatment, but that the latency of response was greater.

2. Covariance analysis.--On the basis of the correlational data, the motivational variable that appeared most likely to make a difference in achievement was the subjects' evaluation of the treatment after the second lesson. Table 5.04 presents data on this comparison. As is apparent, taking this motivational variable into account did not produce significant differences among treatment means on the dependent variable measures.

Of course the problem of getting between treatment differences due to motivational factors is difficult to test in a program where there is very little between groups variance to begin with. Thus, we may conclude this section on motivation in part by repeating the observation that once you have a successful constructed response program, variations in learner response modes are not likely to produce differences in achievement so that there is no variance to explain, whether due to motivation or other variables. However, the significant finding in relation to motivation is that it does make a difference in within group variance on constructed response programs as well as in other program forms. This result suggests further research on long term effects and on exactly how motivation operates to influence performance as well as suggesting some immediate practical procedures and advantages for taking preferences into account in assigning students a programed text.

Table 5.01

Analysis of Variance of Total Immediate and Total Delayed Retention Measures on Four Experimental Treatments

Source of Variation	Sums of Squares	d.f.	Mean Square	F[a]
	Total Immediate (T-I)			
Between	785	3	262	1.5
Within	29636	171	173	
Total	30421			
	Total Delayed (T-D)			
Between	360	3	120	---
Within	32154	171	188	
Total	32514			

a. For 3 and 171 degrees of freedom an F of 2.66 is required for significance at the .05 level.

Table 5.02

Analysis of Covariance on Immediate and Delayed Retention Adjusted for Total Time and Total Errors Within Program

Source of Variation[a]	Sums of Squares	d.f.	Mean Square	F[b]
Dependent Variable (T-I) Correlated Variable (TT)				
Between	1696	3	565	3.40
Within	28390	171	166	
Total	30086			
Dependent Variable (T-I) Correlated Variable (TE)				
Between	3081	2	1540	11.41
Within	16754	124	135	
Total	19835			
Dependent Variable (T-D) Correlated Variable (TT)				
Between	1101	3	367	2.05
Within	30565	171	179	
Total	31666			
Dependent Variable (T-D) Correlated Variable (TE)				
Between	2090	2	1045	6.41
Within	20160	124	163	
Total	22250			

a. Analyses involving Total Errors (TE) are based on Treatments 1, 2, 4 only since Treatment 3 (copying answer) had no within program errors.

b. For 3 and 171 degrees of freedom an F of 2.66 is required for significance at the .05 level and 3.90 at the .01 level. For 2 and 124 degrees of freedom an F of 3.07 is required for significance at the .05 and 4.78 for the .01 level.

Table 5.03

Correlations Between Uncontrolled Variables and Total Immediate (T-I) and Total Delayed (T-D) Retention Measures

Variable	Mean	S.D.	T-I	T-D
Treatment 1 (N=50)				
GPA	2.69	.53	.19	.22
ACE-L	69.98	14.66	.55	.51
TE (Error)	47.48	27.44	-.54	-.50
TT (Time)	198.80	48.80	-.34	-.23
Treatment 2 (N=50)				
GPA	2.62	.55	.39	.41
ACE-L	68.96	11.84	.34	.41
TE (Error)	20.50	10.99	-.33	-.36
TT (Time)	149.50	36.70	-.03	-.19
Treatment 3 (N=48)				
GPA	2.77	.60	.48	.42
ACE-L	71.35	13.28	.37	.40
TE (Error)	-----	-----	---	---
TT (Time)	148.90	39.00	-.08	-.16
Treatment 4 (N=27)				
GPA	2.73	.62	.51	.54
ACE-L	72.67	16.61	.55	.56
TE (Error)	47.04	19.33	-.69	-.64
TT (Time)	231.70	48.70	-.43	-.38

a. Values of r for significance at the .05 level (in parentheses) and .01 level (underlined and in parentheses) are as follows: N=50 (.24) (.33); N=48 (.24) (.34); N=27 (.32) (.45). These are one tailed tests.

Table 5.04

Intercorrelations[a] of Semantic Differential Scores and Total Immediate and Total Delayed (T-D) Retention

Variable	Mean	S.D.	T-I	T-D
Treatment 1 (N=50)				
EvM-pre	4.81	1.44	.29*	.24*
EvM-2	4.96	1.28	.31*	.27*
EvM-6	5.27	.96	.16	.14
Treatment 2 (N=50)				
EvM-pre	5.02	.92	-.01	.01
EvM-2	5.17	.96	-.02	.00
EvM-6	5.23	.84	-.14	-.18
Treatment 3 (N=48)				
EvM-pre	4.63	1.26	-.09	-.06
EvM-2	4.25	1.26	-.19	-.15
EvM-6	4.64	1.23	-.33*	-.25*
Treatment 4 (N=27)				
EvM-pre	5.20	.68	.26	.01
EvM-2	4.28	1.29	.26	.06
EvM-6	4.81	1.12	-.02	-.17

a. Values of r for significance at the .05 level (in parentheses) and .01 level (underlined and in parentheses) are as follows: N=50 (.24) (.33); N=48 (.24) (.34); N=27 (.32) (.45). These are one tailed tests.

Table 5.05

Analysis of Covariance on Immediate (T-I) and Delayed (T-D) Total Retention Adjusted for Evaluation of Method After Lesson 2 (EvM-2)

Source of Variation	Sums of Squares	d.f.	Mean Square	F[a]
Dependent Variable (T-I) Correlated Variable (EvM-2)				
Between	905	3	302	1.75
Within	29507	171	173	
Total	30412			
Dependent Variable (T-D) Correlated Variable (EvM-2)				
Between	431	3	144	.77
Within	32075	171	188	
Total	32506			

a. For 3 and 171 degrees of freedom an F of 2.66 is required for significance at the .05 level.

CHAPTER VI

SUMMARY AND CONCLUSIONS*

The study reported here is an investigation of (1) the effectiveness of a learning program and (2) the effect of two variables on the outcomes of programed learning: (a) motivational differences among learners and (b) the form of the learners' responses. This study is an outgrowth of an earlier study by the author (Della-Piana, 1957).

The experimental program text.--The programed text used in the study was a 280 frame (8 lessons, 35 lessons) Skinnerian-type learning program titled "An Introduction to Counseling" (a revision of Ellison, 1960). The content of the program included mainly Porter's categories of counselor responses (Porter, 1950) and parts of Perry and Estes (1953) article dealing with a resolution of the directive-nondirective dilemma in education and therapy. The behavior expected from the learner in relation to this content is made clear in the description of the dependent variable measures below and in Appendices II to V.

Structurally the program is Skinnerian, moving gradually from highly prompted initial frames to unprompted terminal frames which define the criterion behavior. There was no fixed standard for frequency of review items, speed of fading, or type of prompts. One criterion of the effectiveness of this program is the percent of correct responding within the program. On a constructed response version of the program the error rate on lessons ranged from 7 to 14 percent, with an overall error rate of eleven percent. The error rate on criterion frames alone (within the program) was twelve percent. However, several criterion frames had error rates ranging from 14 percent to 32 percent. An inspection of these frames reveals that they involve distinctions between Porter's "evaluative" and "interpretive" counselor response categories. The current version of the program has cut error rates on these difficult frames by 50 percent, but it appears that future improvements are not likely to be made without a redefinition of the "interpretive" and "evaluative" counselor response categories. The error rate on criterion frames excluding these few difficult items is only five percent. Thus, we have a fairly adequate Skinnerian type program, structurally speaking, and we have discovered specific weaknesses in the content of our program.

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*This chapter with slight modifications was presented at the annual meeting of the American Educational Research Association in Atlantic City in February 1962, under the title of "An Experimental Evaluation of Programed Learning".

Design and procedures of the study.--The learner response variable defines the four treatments in this investigation. They are as follows:

Treatment 1 utilized a constructed response version of the program as described above. The student read the item, wrote his answer on a separate sheet, then turned the page to find the correct answer. Students were limited to one lesson a day. After completing a lesson they went back over items missed. Three trials were allowed on missed items.

Example: In the layman's terms 'counseling' and 'advising' have often been thought of as synonymous, but the process of counseling is more than giving __________.

Treatment 2 utilized the same program and procedures as Treatment 1 except that the initial letter(s) of the response called for were given in red.

Example: In the layman's terms 'counseling' and 'advising' have often been thought of as synonymous, but the process of counseling is more than giving ad________.

Treatment 3 also utilized the same program and procedures as Treatment 1 except that the entire response called for was included in the program in red, the student was simply required to copy the response, and checking the answer or repeating items was not done since no errors were made.

Treatment 4 utilized the identical program used in Treatment 1, but the procedures differed. In this treatment each student had a proctor who said "right" if the answer was correct and "wrong, try again" if the answer written by the student was incorrect. The student kept trying until he got it right or until he had made three trials.

A record of time on the lesson and actual responses were kept for each student.

Before assignment to treatments, students were administered the American Council on Education Psychological Examination (ACE) and a work sample program followed by semantic differential judgments of the program (to be described below). One hundred and seventy-five out of an initial sample of 230 juniors in secondary education were used as subjects. Twenty-seven more were used as proctors for Treatment 4 and the remainder were used in another study. Students were randomly assigned to treatments and then a few cases were intentionally shifted to avoid wide discrepancies in grade point average (GPA) and total ACE scores.

There were no significant differences among treatments in GPA, ACE-Linguistic, ACE-Total and pre-experimental evaluative judgments of the treatment to which they were assigned. There were significant differences in the ACE-Quantitative score.

During the program (after the 2nd and 6th lesson) evaluative judgments were made of the treatments. These evaluative judgments using the semantic differential technique constituted our measure of "motivation". After completion of the program an immediate retention test was given and seventeen days later it was repeated.

Description of scores.--Scores referred to in the results are described here. Some of these measures are based on pre-experimental data, some on data obtained during the experiment and some on immediate post-experimental testing and delayed (17 days later) post-experimental testing.

1. Grade Point Average (GPA).--This score is a cumulative grade point average taken from university records except for a few cases (transfers) where we used the student's estimate. Treatment mean GPA's were 2.69, 2.62, 2.77, 2.73 respectively for Treatments 1, 2, 3, and 4 where a 4.0 is an "A".

2. American Council on Education Psychological Examination--Linguistic (ACE-L).--Treatment means on this score were 69.98, 68.96, 71.35, 72.67 respectively for Treatments 1, 2, 3, and 4. L-score of 70 corresponds to about the 60th percentile in four year colleges on the 1954 college freshmen edition.

Semantic differential scores.--These scores were obtained by use of Osgood's (1957) semantic differential technique. Using ten of his 7-point bipolar adjective, evaluative scales (good-bad, valuable-worthless, fair-unfair, etc.) we had students judge all treatments before assignment to a treatment. Each student was taken through part of an earlier version of the Analysis of Behavior (Holland-Skinner, 1961) doing two lessons (sets) in each of our four treatments. They then judged all four treatments (as well as selected concepts) on the semantic differential evaluative scales. Judgments of the treatment to which they were assigned were taken after the second and sixth lessons of the experimental program. Scores, 3, 4, and 5 below were among the scores based on this data. A high score is "good" and a low score is "bad".

3. Pre-treatment Evaluation of Treatment (EvT*-pre).--This score is a subject's pre-experimental judgment on the ten evaluative scales of the method or treatment to which he was finally assigned.

4. Evaluation of Treatment after second lesson (EvT-2).--This score is a subject's evaluative judgment, after lesson two, on the ten evaluative scales, of the concept "treatment to which you were assigned".

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*This and the following two scores were referred to as "EvM" in previous chapters signifying "Evaluation of Method". EvT, Evaluation of Treatment, is used consistently in this summary.

5. Evaluation of Treatment after sixth lesson (EvT-6).--This score is a judgment by the subject, after Lesson 6, on the ten evaluative scales, of the concept "treatment to which you were assigned".

6. Total Error (TE).--This score is simply the total number of within program errors, where an error is either an omission of response or incorrect response on the first try. There were, of course, no errors in Treatment 3. With 436 blanks in the 280 frame program, the total possible error range was 0 to 436.

7. Total Time (TT).--Time (in minutes) for completion of the program determined this score. A full 50 minute class period was available and only one lesson per day was alloed.

8. Total Immediate Retention (T-I).--This score was based on the test given immediately upon completion of the program. Actually, it was given during the two days following completion of the program. It is based on several subtests without sufficient reliability or independence for separate use. Reliabilities for this and the following score were in the 80's.

The test called for a wide range of behavior in relation to the program content. One test (Composing Specified Counselor Responses) called for behavior not actually called for within the program.

9. Total Delayed Retention (T-D).--This score was obtained exactly as for variable 8 except that the test was given seventeen days later.

Summary of Results

1. Effectiveness of the programed text.--We mentioned above that there was a 12% error rate on criterion frames within the program. This error rate dropped to 10% on the criterion frames test given upon completion of the program. The outstanding findings of an item analysis of post-treatment measures are:

a. Achievement was rather good on all tests. Thus, the median item p (percent passing) on subtests were: Cf-test (93.5), Rg-test (89.5), An-test (63.5), and Syn-test (73.0).

b. The program was not as effective in getting subjects to label "new" counselor responses (Analysis Test) and to produce specified counselor responses (Synthesis Test) as it was in getting responses actually called for in the program.

c. The tests pointed up the kinds of behavior that need more effective programing (e.g., the interpretive-evaluative distinction). It is clear that many students were able to produce written counselor responses even though they were not called on to do that in the program, but more effective production of this behavior might follow actually calling for such responses in the program.

It appears that great variability on dependent variable measures is synonymous with poor programing. This suggests some possibilities for research strategy in the case where we are still looking for factors influencing performance.

a. Where a highly effective program has been developed, an analysis of individual cases might be made to generate hypotheses as to why some few subjects did not perform adequately or a greater number of the special cases with greater variability may be sought for investigation.

b. While we no doubt have at hand the techniques for effective programing for the kind of learning outcomes we have been measuring, it is likely that other significant programing variables will arise as we attempt to construct longer programs for a variety of learning outcomes over varying retention periods.

2. The learner response variable.--Conclusions drawn from data relevant to this variable are discussed under a and b below.

a. We did not find significant differences among treatments on either the immediate or delayed total retention measures. Since we have already demonstrated the low error rate in our program (and in post-treatment measures) our finding is consistent with previous studies (Krumboltz, 1961) indicating that variations in learner response mode have little relevance when there is a high probability of correct responding. We had expected different results in the present study because we included some tests calling for behavior like that called for in the program and some not. However, as mentioned above subtests were generally too easy and thus lacked sufficient reliability for an adequate look at this possibility. Research is now underway extending two of the subtests with already fair reliabilities and low intercorrelations.

b. Since our time and error variables yielded significant differences among treatments it was expected that an analysis of covariance, taking time and errors into account, would yield significant differences among treatments on Total-Immediate and Total-Delayed retention measures. A summary of results derived from such data is presented under 1 to 5 below:

(1) Errors within the program were significantly negatively correlated with T-I and T-D retention measures in Treatment 1, 2 and 4.

(2) Mean Total Errors in Treatment 2 were significantly lower than errors in Treatments 1 and 4. Mean errors for Treatments 1, 2 and 4 were 47, 21 and 47 with sigmas of 27, 11 and 19.

(3) Time on program was negatively correlated with T-I and T-D retention measures on Treatments 1 and 4 but not in Treatments 2 and 3.

(4) Mean Total Time on program was significantly greater in Treatments 1 and 4 than in Treatments 2 and 3. Mean time (in minutes) for Treatment 1 to 4 respectively was 190, 150, 149, 232 with standard deviations of 49, 37, 39, and 49.

(5) Applying Kramer's extension of Duncan's Multiple Range Test (Kramer, 1957) on the results of the covariance analysis we found that Treatments 2 and 3 were significantly more efficient than 1 and 4 in terms of the criterion of achievement per unit of time and errors. These results are consistent with those obtained in other studies using a Skinnerian type program.

3. The motivational variable.--Conclusions relevant to our motivational variables (variables 3, 4 and 5 described above) are summarized here.

a. For Treatment 1, subjects' "good-bad" judgments of the treatment were significantly correlated with performance when these judgments were made beforethe experiment or after the second lesson, but not when made after the sixth lesson. The lack of significant correlation between evaluation of the treatment (after Lesson 6) and T-I and T-D retention may be explained largely by the fact that the mean evaluation of the treatment went up and the variance became quite low. Osgood (1957) found that a shift in factor score of .4 score units is significant at the .05 level. If this is so for our data (we have no stability measures) the shift from Evt-pre to EvT-6 is significant.

b. We found that in Treatment 3 (the copying treatment) the only significant correlations between motivation for the treatment and achievement were the negative correlations between evaluation of treatments after Lesson 6 and T-I and T-D retention. It is tempting to speculate concerning these results. It appears that one's judgment of Method 3 changes with experience in the program (e.g., correlation between pre-experimental evaluation and Lesson 2 evaluation is .46, but between Lesson 2 and Lesson 6 it is .73). This raises the question as to what happens to attitudes after experience with a method. It appears here that they change, but are fairly stable after the second lesson. The negative correlations between these judgments and test performance could be due to interfering emotional responses when those who rated the treatment favorably found that the answers did not come immediately to them on the post-experimental measure.

c. Analysis of covariance, taking semantic differential judgments of treatments into account, still did not yield significant treatment differences on our dependent variable measures.

In summary, our data show that we have a fairly effective constructed response program in terms of high correct responding on criterion frames and other post-experimental measures. For this program, the variations in learner response mode which we introduced produced no differences in amount of immediate or delayed retention. However, the more highly prompted Treatments (2 and 3) yielded an advantage of efficiency over the other treatments. That is, they produced the same immediate retention with less time and fewer errors in learning and the same delayed retention with fewer errors in learning. Also, adjusting for differences on our motivational variables yielded no treatment differences on immediate and delayed retention. However, in the constructed response form (Treatment 1) the subjects' evaluations of the treatment were positively related to performance and showed an increasing preference with experience in the treatment. The significant findings in relation to motivation are that it does make a difference on within group variance for the constructed response program, that the relation between motivation and performance differs in different forms of the program, and that this suggests further research on long term effects and on how motivation operates to influence performance as well as suggesting some immediate practical procedures and advantages for taking preferences into account in assigning programmed texts to students.

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APPENDIX I

A SELF REPORT INVENTORY OF ACHIEVEMENT MOTIVATION

The purpose of this inventory is to get at how you think or feel about each of the items mentioned. We will report back to you the way the class as a whole responded--without identifying any individuals. We will report to you, individually, your particular picture.

Remember, you are asked to rate yourself, not in accordance with what you think you should do or feel, or as you think others might do or feel, but as you yourself are in the habit of doing or feeling.

There are no "right" or "wrong" answers to these statements, and there is no time limit on the inventory. Please do not omit any statements. It will only take a few minutes.

Mark your answers on the separate answer sheet. Make no marks on the question sheet. For each of the 20 statements, a five-point scale is provided for indicating whether you rarely, sometimes, frequently, generally or almost always feel as the statement suggests.

To aid you in answering the question, a guide is presented below. Use it as follows: column 1 should be marked on your answer sheet if you rarely (0 - 15% of the time) feel as the statement suggests.

Column 1 - RARELY (0 - 15% of the time)
Column 2 - SOMETIMES (16 - 35% of the time)
Column 3 - FREQUENTLY (36% - 65% of the time)
Column 4 - GENERALLY (66 - 85% of the time)
Column 5 - ALMOST ALWAYS (86 - 100% of the time)

1. I like to be successful in things undertaken.

2. I am more ambitious than the average person.

3. I like to accomplish tasks that others recognize as requiring skill and effort.

* 4. I wish I were more successful as a student.

5. My parents (or guardians) are well satisfied with my grades.

6. I have a definite fear of failing my work.

7. I like to do my very best in whatever I undertake.

8. I would like to be a recognized authority in some job, profession, or field or specialization.

9. I like to solve problems and puzzles that other people have difficulty with.

10. It is important that I gain better grades this year than I did last year.

11. I work much harder than the typical student of my sex.

*12. My parents (or guardian) exert considerable pressure on me to achieve good grades.

13. I like to be able to do things better than other people can.

14. I find the standards I set for my own work are too high for me to attain.

15. I have strong motivation to succeed in my work.

16. My study habits are much better than the average student of my sex.

17. I would like to accomplish something of great significance.

18. My grades are extremely important to me.

19. I like to be able to say that I have done a difficult job well.

20. I feel a pressing need to achieve.

Underlined items are those scored for achievement motivation.

*Asterisked items have negative loadings.

APPENDIX II

CRITERION FRAMES TEST

L-8 (35)* Porter's five categories of counselor response are:
1. ____________________ 2. ____________________
3. ____________________ 4. ____________________
5. ____________________

L-8 (34) The four types of error commonly made in attempting an understanding response are:
1. ____________________ 2. ____________________
3. ____________________ 4. ____________________

L-2 (32) Heuristic set has occurred when the client assumes ultimate responsibility for two functions in the relationship: ____________________ and ____________________, and when he is netierh extremely ____________________ (accepting all the counselor says) nor ____________________ (regretting everything).

L-8 (1) Three names for the counseling approach originated by Carl Rogers are:
1. ____________________ 2. ____________________ or
3. ____________________

L-6 (3) The non-directive counselor most commonly uses ____________ response.

L-8 (4) A counselor response which merely repeats the client's words is inaccurate in ____________________.

L-8 (7) An error in ________________________ may exaggerate or minimize the client's feelings or degree of affect.

L-7 (16) A response inappropriate in ______________________ may be too complicated or technical, crude, or too colloquial.

L-8 (24) Out-an-out interpretation, particularly if too premature, may result in an error of ______________________. Example:
Client: "I can't remember his name."
Counselor: "You have a dislike for the man and thus you forgot his name."

*Identifying symbols before each item indicate what lesson-item in the program the test item represents. Thus "L-8 (35)" means that this item was taken (directly or with slight modification) from Lesson 8, item 35 in the counseling program.

L-1 (9) In the initial stages of counseling, it is important to clarify the role of the counselor and client. This is known as ________________ the situation.

L-5 (32) Extensive use of supportive responses may result in the client being excessively ________________ on the counselor for support.

L-6 (12) The response which suggests sympathy or helps to pacify the client is the ________________ response.

L-6 (11) The response that would most probably be phrased as a question is the ________________ response.

L-6 (13) The response which is accepting of the client's feelings is the ________________ response.

L-5 (21) The ________________ response attempts to show the cleint why he might have done something or felt some way or what his underlying motives probably were.

L-5 (15) If I tell a person that he was absolutely in the right for "telling off" his boss, I have made a(n) ______________ response, because I have implied that he ought ____________ ________________ that.

L-8 (9) Client (sobbing): "I love him and I want to marry him... and now my parents are sending me away."
Counselor: "You're a little disturbed by your parents' action?" This response is inappropriate in ______________.

L-7 (22) Client: "I don't know why, but I just can't seem to settle down and study."
Counselor: "I see, you don't comprehend your inability to comply with the demands of the course work." The counselor's response is inappropriate in ________________.

L-7 (5) Client: "I feel like a failure."
Counselor: "You feel like a failure." The counselor's response exemplifies a ________________ error.

L-8 (23) Client: "The course is all right but I don't like it. It's like sitting down at a big dinner when I don't like the food."
Counselor: "There are some foods you don't especially like." The counselor has made an error in ____________.

Panel L-6 In the following items read the client's statement and classify the counselor's statements by labeling each one according to one of Porter's five categories.
Client: "I always feel uncomfortable around the students in this school. They seem so stuck up. Out in California I seemed to get along all right with the kids--but maybe I'm slipping some way."

____________ 1. "Do you show yourself to be as sociable here as you did in California?"

____________ 2. "Although the rest of the students seem sort of stuck up, you sometimes wonder whether you're the one that is slipping."

____________ 3. "It might be a good idea to analyze yourself a little more carefully to see why you are not getting along as well."

____________ 4. "It is probably your own fault in not showing yourself to be very friendly here in school. Perhaps you should try to be more sociable yourself."

____________ 5. "Maybe you really don't have too much to worry about especially since you got along well in California. Time will probably take care of it."

APPENDIX III

RECOGNITION TEST OF TERMINOLOGY AND THEORY

PART I Directions: Following are multiple-choice questions on concepts and general principles covered in an Introduction to Counseling. Choose the appropriate answer and indicate your choice by placing a mark in the corresponding space on the answer sheet provided. There is only one correct answer for each item.

1. In solving personal problems, high degrees of conflict, anxiety and frustration most often act as
   a. disrupting influences.
   b. tension releases.
   c. defenses.
   d. aids to rapport.

2. Non-directive responses to client statements tend to place emphasis on
   a. the perceptual and feeling aspect of the problem as the client sees it.
   b. the "external frame of reference" of the client.
   c. the imbeddedness of the counselor's values in his approach.
   d. the quality and intensity of the disturbancy as seen from the expert's viewpoint.

3. Establishment of "heuristic set" is necessary before the counseling process can be expanded toward
   a. a non-directive framework.
   b. the use of reflection of feeling.
   c. a collaborative framework.
   d. the use of a structured situation.

4. Which of the following are correctly matched?
   a. Directive--telling; Non-directive--perceiving together; Collaborative--mirroring.
   b. Directive--perceiving together; Collaborative--mirroring; Non-directive--perceiving together.
   c. Non-directive--mirroring; Directive--telling; Collaborative--perceiving together.
   d. Collaborative--telling; Directive--mirroring; Non-directive--perceiving-together.

5. Which of the following approaches to counseling is losing ground in contemporary theorising
   a. Directive.
   b. Collaborative.
   c. Rogerian.
   d. Client-centered.

6. Assuming a counselor wants utlimately to expand toward a collaborative structure in counseling, what should precede?
   a. Directive counseling.
   b. Heuristic set.
   c. Testing.
   d. Establishment of dependence.

7. Non-directive, or client-centered counseling gained much ground under the extensive theorizing of
   a. Elias Porter.
   b. C. H. Rogerian.
   c. Sigmund Freud.
   d. Carl Rogers.

8. A Probing response is one which indicates the counselor's intent is
   a. to prepare for the collaborative approach.
   b. to seek further information or provoke further discussion along some line.
   c. to reduce the client's intensity of feeling to a point where he can profitably pursue the line of discussion.
   d. to bridge the gap between the non-directive and directive approaches.

9. An Understanding response is one which indicates the counselor's intent is
   a. to respond as in effect to ask the client whether the counselor understands correctly what the client is expressing.
   b. to clarify for the client the meaning of his feelings and behavior so that the client may gain a clearer self-understanding.
   c. to show warmth by reassuring the client and reducing the intensity of his feelings and emotions.
   d. to convey to the client the counselors understanding of why the client behaves as he does.

10. An Evaluative response is one which indicates the counselor's intent is
    a. to teach, or impart meaning regarding the client's behavior or feelings so as to imply what the client might or ought to think about them.
    b. to clarify for the client the reasons for his feelings and behavior so that he may grow in his understanding of himself.
    c. to indicate the relative goodness, appropriateness, effectiveness, or rightness of the client's feelings and behavior.
    d. to stimulate thought by the client as to the value of continuing to feel as he does, in an effort to pacify or reassure him.

11. An Interpretive response is one which indicates the counselor's intent is
    a. to pacify, reassure, and reduce the intensity of feeling, implying that he need not feel as he does.
    b. to respond as in effect to ask the client whether the counselor has understood the reasons or meaning behind his behavior.
    c. to provoke further discussion and information-giving regarding the appropriateness or righteness of the client's feelings and behavior.
    d. to impart meaning to the client's feelings and behavior so as to imply what the client might or ought to think about them.

12. A Supportive response is one which indicates the counselor's intent is
    a. to seek further information or provoke further discussion from the client so the client can "air" his feelings.
    b. to respond as in effect to ask the client whether the counselor has understood the reasons or meaning behind his behavior.
    c. to reassure, pacify, or reduce the client's intensity of feeling, as if to imply in some way that the client need not feel as he does.
    d. to gain more information for support of a judgment or decision regarding a course of action.

13. For a client who is somewhat reluctant to "open up" and talk about his problems, which one of the following types of responses could likely arouse defensiveness?
    a. Understanding.
    b. Probing.
    c. Supportive.
    d. Accepting.

14. What type of response is a directive counselor likely to use extensively before arriving at diagnoses and decisions?
    a. Probing.
    b. Interpretive.
    c. Evaluative.
    d. Supportive.

15. A Rogerian counselor acts to help the client understand his feelings and behavior as revealed by information volunteered by the client; he is therefore unlikely to make many
    a. Supportive responses.
    b. Interpretive responses.
    c. Understanding responses.
    d. Probing responses.

16. Where a client is too upset and emotional to think or act constructively in the interview situation, which of the following type responses would be most acceptable?
    a. Probing.
    b. Evaluative.
    c. Supportive.
    d. Interpretive.

17. Which of the following type responses is generally more acceptable late in the counseling relationship than early?
    a. Interpretive.
    b. Supportive.
    c. Understanding.
    d. Evaluative.

18. Heuristic set consists of the client feeling that he, rather than the counselor, is responsible for the functions of
    a. initiative and interpretation.
    b. evaluation and initiative.
    c. interpretation and evaluation.
    d. initiative for evaluation, and interpretation.

19. Completing a sentence for the client, responding only to the last thing said, responding to material presented for illustrative purposes only, and out-and-out interpretation are all ways of responding with inaccurate:
    a. Level.
    b. Content.
    c. Depth.
    d. Meaning.

20. The non-directive counselor conveys understanding and acceptance of the client by
    a. responding to the client's feelings about himself and his problem.
    b. refraining from giving advice and emotional support.
    c. letting the client do most of the talking.
    d. responding to the "external frame of reference."

21. A Content error may be involved in a response where the counselor
    a. uses language too complicated, technical, crude or too colloquial.
    b. merely repeats the client's words or thought sequence in making his response.
    c. fails to match the client's degree of feeling or affect in making a response.
    d. exaggerates or minimizes the client's feelings in making a response.

22. A Depth error may be involved in a response where the counselor
    a. uses language too complicated, technical, crude or too colloquial.
    b. merely repeats the client's words or phrasing in making his response.
    c. fails to reflect acceptance and understanding in his response.
    d. minimizes or exaggerates the client's feelings in attempting to match affect.

23. A Language error may be involved in a response where the counselor
    a. uses language which exaggerates or minimizes the client's feelings about his problem and situation.
    b. uses language which fails to reflect feelings, attitudes, and perceptions about the problem at hand.
    c. uses language which is crude, colloquial, or too complicated or technical for the client's understanding.
    d. responds by completing a sentence for the client in his own words rather than in the language of the client.

24. A Meaning error may be involved in a response where the counselor
    a. adds or omits meaning in attempting to match the client's perceptions.
    b. exaggerates or minimizes the intensity of the client's feelings.
    c. responds to deep feelings with light, meaningless responses.
    d. tries to interpret the meaning of the client's feelings too late in therapy.

25. Rogerian counseling is also called:
    a. collaborative.
    b. client-centered.
    c. directive.
    d. advising.

26. According to the non-directive theorist, the self-directing tendency of the individual is best released
    a. by direct probing.
    b. by just letting the client talk.
    c. by developing an atmosphere of acceptance.
    d. by developing an atmosphere of defensiveness.

27. Reflecting feelings and perceptions of the client
    a. usually results in increased rejection of the counselor's advice.
    b. usually brings his ideas out in the open so he can think about them.
    c. usually results in increased dependence on the counselor.
    d. helps him see the counselor as an advisor.

28. Structuring the situation means helping the client
    a. to learn to accept advice without arguing.
    b. to learn to solve his own problems.
    c. to look at his problems objectively.
    d. to know what is expected of him.

29. Heuristic set is facilitated primarily by the use of what type of response?
    a. Probing.
    b. Understanding.
    c. Interpretive.
    d. Evaluative.

30. Non-directive counseling is recommended as
    a. second only to directive counseling.
    b. preferably to be used prior to collaborative counseling.
    c. preferably to be used prior to a strictly client-centered counseling.
    d. the most popular but least effective counseling approach.

31. "Heuristic set" has been reached when
    a. the counselor reflects the client's feelings and perceptions.
    b. the client accepts the counselor's advice.
    c. the client looks at the counselor as a source of information to be considered.
    d. the client's negativism, or willingness to reject most advice, has set it.

32. Which order of events is most likely and desirable?
    a. non-directive approach--heuristic set--collaborative approach.
    b. collaborative approach--non-directive approach--heuristic set.
    c. non-directive approach--collaborative approach--heuristic set.
    d. heuristic set--non-directive approach--collaborative approach.

33. The non-directive counseling interview rests primarily on an emotional climate characterized by
    a. putting the client at ease.
    b. threatening the client sufficiently so he will take action on his problems.
    c. conveying understanding and acceptance of the client's feelings.
    d. fostering a need for acceptance of statements of experts in the field.

34. When a client becomes neither extremely dependent nor extremely negativeistic after the initial phases of counseling
    a. he is too easy going for "heuristic set" to be useful.
    b. he is ready for the non-directive approach to counseling.
    c. he is ready to leave the collaborative phase of counseling.
    d. heuristic set has been established.

35. The giving of advice, proposing solutions, and making interpretations by the counselor:
    a. is never recommended.
    b. is recommended only in the directive approach.
    c. is recommended at the beginning of the non-directive approach with experienced counselors.
    d. is recommended when the client shows signs of being ready for it.

APPENDIX IV

TEST OF ABILITY TO ANALYZE CLIENT-COUNSELOR INTERCHANGES

PART II; DIRECTIONS: In items 36 to 60 you are to read the client's statement and then select the response called for. There is only one correct answer for each item.

36. Choose the Supportive response.

The client comes into the office, then says, "Now I've come, it seems foolish, and I wonder why I came. I guess I don't really have a problem after all."

a. "Many clients feel silly when talking to a counselor."
b. "Your feelings indicate underlying tension."
c. "Your feelings have changed since deciding to come."
d. "What was it you intended to talk about?"
e. "You should not let your feelings stop you from talking."

37. Choose the Understanding response.

Cl. "I'm not here because I'm neurotic, I've heard that you give advice, and I have a decision I need advice on."

a. "Yes, we have the job of helping where we can."
b. "You have a problem that needs decision."
c. "You feel that something is wrong with you."
d. "When did your problem begin?"
e. "Some of these problems begin in early childhood."

38. Choose the Interpretive response.

Cl: "Just what are you? A doctor, a psychologist, a psychiatrist, a social worker, or just what?"

a. "Why do you ask? Does the word psychology bother you?"
b. "You don't understand what kind of a doctor I am."
c. "I am a psychologist and I have been trained to understand and help people to solve problems that interfere with their happy life."
d. "Don't let the word psychologist bother you."
e. "You feel it is important you you know what kind of a person I am before you proceed with your problem."

39. Choose the Probing response.

The client is seated and then begins: "This is my first experience at something like this and I don't know quite how to start."

a. "You would like to talk about your problem but it's hard for you to find a place to begin."
b. "You might begin with the thing that is troubling you most. Perhaps we can solve the lesser problems as we go along."
c. "I guess we all have problems sometimes and we don't know where and how to begin."
d. "Would you like to start by telling me why it was you wanted to come?"
e. "These problems have their roots early in our lives."

40. Choose the Understanding response.

Cl: "Well, I don't really know why I'm here. I've been having trouble with my studies but I know why that is: I just haven't been buckling down to my studies. Anyway, the Dean said I'd have to come over here, so here I am."

a. "Do you feel there is any reason why you haven't been able to 'buckle' down to studying? Is something bothering you?"
b. "You know why you've been having trouble with your studies."
c. "Maybe we can work this problem out together. I have a few suggestions I could make."
d. "You're having trouble with your studies and it's been bothering you, so the Dean sent you here to talk to me."
d. "If you're having trouble with your studies, I think we ought to get to the bottom of it all, and see what can be done about it."

41. Choose the Probing response.

Cl: "I'm worried about my young daughter. She's completely out of control so I though I'd better come and get some help."

a. "You feel quite helpless in the situation, is that it?"
b. "Tell me more about your child. How does she react to you and to your husband?
c. "Often the problems of children are not deep-seated. I think with your help and the help of your husband we can find what has caused this situation."
d. "It is possible that you are overly concerned with your child. Perhaps either you or your husband are projecting your own difficulties on her, or possibly a real behavior problem does not exist with your child, but is tied in with the difficulties of you or your husband."
e. "Talking over the problem may give us insight into it."

42. Choose the Supportive response.

The client is unable to speak. Blushes and clenches his hands, staring at the wall.

a. "What's the trouble?"
b. "I gather it's pretty hard to get started."
c. "Are you uncertain as to just where to start?"
d. "Is everything sort of jumbled up?"
e. "Don't worry, many people feel like this when they try to talk about a problem."

43. Choose the Supportive response.

Cl: "I thought I had something to talk about--but I go around in circles. I was trying to think of what to say...but it doesn't come out."

a. "Now that you're here you feel confused in trying to bring out the things which you planned to talk about, is that it?"
b. "Could you tell me a little more about your doubts and uncertainties?"
c. "I understand how you feel about that but it's going to block you from getting at the cause of your trouble if you don't try to get away from it."
d. "You should be happy but you find that you are troubled by doubts and uncertainties."
e. "Don't feel badly, you can explain if you go slowly."

44. Choose the Understanding response.

Cl: "Several things are wrong with me, but they all boil down to an unresolved oedipus. Two analysts told me this is the source, but it didn't do me a damn bit of good."

a. "You might tell me some of the things you have done to try to resolve this complex."
b. "It is pretty discouraging to feel that you haven't made any progress in overcoming your difficulties."
c. "An analyst can often locate the course of a person's trouble but the person himself has to put forth most of the effort to overcome it."
d. "This love of your mother seems to be causing tension in your behavior."
e. "You are fairly certain of the area in which your problem lies, but have not been successful in finding a solution."

45. Choose the Probing response.

Cl: A young woman in her twenties, with marital problems. Her friends advised her against the marriage. "My husband is neurotic, so am I, probably." (She bounces a small crying baby on her lap.) "You can see the situation, it's a hell of a mess. Now what should I do? Shall I send my husband in?"

a. "Could you tell me more about your feeling neurotic?"
b. "Your desire to have your husband visit me seems to place the guilt on him."
c. "This is certainly something which needs clearing up to bring happiness to the family once again."
d. "I wouldn't worry about it too much. Somehow we'll get to the bottom of it."
e. "You feel that your husband should come to visit me, is that it?"

46. Choose the Evaluative response.

Cl: "I'm in education. I'm trying to get along academically, and get good grades. I didn't do too badly last quarter, but it wasn't as well as I used to do. I felt I'd do better this quarter, but I'm not--I'm not studying at all. It's very important that I improve. I'd like some help, in study habits particulary. Perhaps you can help get rid of what's blocking me and all."

a. "It worries you that you feel you should be doing better than you are."
b. "Tell me something about your study habits, and why they seem to be poor."
c. "Quite often students find it difficult to use certain study habits successfully."
d. "You probably have poor study habits. Perhaps your *ability* to concentrate has been lessened by tension."
e. "I believe we should analyze your study habits and see where the cause lies for your lack of self-confidence, and perhaps undertake some remedial work."

47. Choose the Interpretive response.

Co: "I see our time is up, perhaps we should stop for the day. Would you like to come back?"
Cl: "Yes, I think so. Will it help?"

a. "Many other clients with problems like yours have been helped here."
b. "Sometimes talking over the issues with someone helps to straighten things out in one's mind."
c. "You seem to have the right attitude toward attacking your problem. With this in mind we may be able to achieve some degree of success."
d. "You feel that the thing you wish most to gain is a sense of calm and well being and that you help to achieve this by talking the problem through."
e. "Can you think of any past experiences which may have caused you to feel as you do?"

48. Choose the Evaluative response.

Cl: A young married woman of twenty-five. She has spent the interview time trying to decide whether she wants or needs counseling. It is clear to the counselor that counseling could really help her (which is true). When he asks her about her appointment she says, "Do you think I should come back? Do I have a problem? I am willing if it will help."

a. "It is quite natural for you to feel upset because of your situation of not knowing if you have a problem or not."
b. "I can see the difficulty you are having and would like to talk longer with you."
c. "Yes. You need to come back and should come back."
d. "Maybe if you came back we could find out more about the situation."
e. "You have quite a decision to make in regards to your condition, and you would like me to help you make a few of them."

49. Choose the Evaluative response.

Cl: A man of 25, when asked what he would like to do about another appointment says, "I don't know. I get the feeling that you are saying--why is he here wasting time--his problems are so trivial."

a. "You are trying to decide whether your problems are really worthy of counseling."
b. "What is important in life anyway?"
c. "All people and any problem is important."
d. "You should be concerned about your problems and trying to solve them."
e. "Feelings of inferiority cause you to think your problem is unimportant."

50. Choose the Interpretive response.

Cl: Man of 25 at the close of the interview. Sobs, "This is terrible torture!--I don't know whether I want to come back or not. I'm afraid I am going to find out something so horrible about myself...I may never recover!"

a. "You are frightened and dread going ahead with this."
b. "I can understand your being upset by this. Most of us are a bit frightened at getting to know our real selves."
c. "Your feelings of fright are evidence of serious tension."
d. "You will have to decide, of course, but wouldn't it be best to go ahead in spite of your dread of it? Your problem can't be helped by avoiding things."
e. "Are you feeling ill?"

51. Choose the response inappropriate in Content.

Cl: (In 2nd interview) "For the last year and a half I have had no incentive in school. Tried to look over the courses and decide what I liked best, but I still don't know. I'll probably have to take vocational guidance. They can check my plans. I'd like to see what they have to say."

a. "You are not quite sure what you like and what your ability is, and would like some help."
b. "You do have a terrific decision to make all right."
c. "So you are really terribly disturbed about this problem."
d. "Uh-huh, too much day-dreaming."
e. "You've been lacking in incentive, and though you've tried to choose the best courses, you want vocational guidance."

52. Choose the response inappropriate in Depth.

Same Cl. as in above. "I'm amazed at the way I can fool myself. I thought something was wrong. The good me...and the bad me...I was worried. Thought I might be a schizoid personality. I wasn't worried seriously."

a. "You have been somewhat worried about whether you might be a schizoid personality."
b. "In other words, some serious questions came up, but they didn't worry you too much."
c. "You have kept fooling yourself so much it's driving you crazy."
d. "There is really nothing to be worried about."

53. Choose the most acceptable response.

Cl: At the close. "Now next week won't be so much uncovering my own problems--I might do some--but will be more of a report on what I'm actually doing to solve these problems."

a. "Umhmm. You feel free to talk about the things that aremost helpful to you."
b. "You feel that you have spent enough time uncovering your problems and it would help you to talk about what you are doing to solve them."
c. "Yes, sure, that's fine. You do what you want here."
d. "You are deeply concerned about the remedy for your problems, rather than the cause."
e. "You feel that you have pretty well exhausted the uncovering process and you would like to evaluate your remedial efforts."

54. Choose the response inappropriate in Content.

Cl: "I'm getting places. I'm making progress. In fact, many of my roommates have remarked that they have seen me going to classes and nearly dropped dead from amazement, and it's given me quite a glow of inward satisfaction that they would talk that way. They think it's smart to loaf and sluff, but I've found that's not true. They kid me about going."

a. "You feel you are progressing because others notice the change, and even though they may make fun of you, you are going on with what you think is right."
b. "You feel you'regetting places. You're making progress and it gives you a glow of inward satisfaction."
c. "I can see you have quite a problem on your hands. I can understand your seeking help."
d. "I'm very glad to hear you are making progress."
e. "You've got kind of a tough deal on your hands, but the evidence seems to point to some terrific progress."

55. Choose the response which is inappropriate in Language.

Cl: "It's hard to know where to start, because I think I can relax more today. I mean I was so--I was very defensive, wasn't I? I mean I felt that."

a. "You feel more at ease today and feel more receptive to counseling. You feel that you were not very cooperative at the last session is that it?"
b. "You realize you didn't utilize the counseling situation in the last interview, and that you were very defensive."
c. "You are completely at ease today. You feel that you didn't give any cooperation and that you received no benefit at all from the last session."
d. "You mean you felt that you weren't going to tell me any more than was absolutely necessary."
e. "You felt that you couldn't give in and pour out all of your troubles last time. You were all screwed up inside and felt all hot and bothered."

56. Choose the response inappropriate in Depth.

Cl: "I sort of keep coming back to the idea that this is all so silly when there are so many people with real problems. I mean I feel it must seem silly to you and it seems silly to me. I don't see any sense in feeling, oh, the way I do about things. I mean there are so many people with real problems, like a lot of fellows I talked to during the war when we had to send dependency discharges, oh, they lost their business and their wives and everything. I mean people who really had something the matter, and here I am just stewing about myself. And, oh, I don't know, I thought, well, what's the use of thinking more about myself because that's the whole trouble anyway."

a. "It seems silly to you to be feeling the way you do about things when there are so many other people with real problems."

(See next page for alternatives b, c, d, and e on item 56.)

b. "You feel that the whole problem is that you think too much about yourself."
c. "You feel chagrined that your problem, which seems insignificant as compared to others, should still annoy you."
d. "You feel out of sorts with yourself because the problem seems to be unimportant compared to those of others, and yet it bothers you."
e. "This really has you so deeply disturbed that you can't sleep nights."

57. Choose the response inappropriate in Meaning.

Cl: (The girl with a marital problem) "...Awfully. And I suppose it's something I've pretty much always done. I don't know why. Probably it started first in relation to my mother. For a long while I've accepted the idea that, oh, my mother didn't really approve of me. She preferred my brother to me. She places a value on the social things, while I was more interested in reading and I never felt secure with her. But I've pretty well accepted it."
a. "You've tried to accept this rejection or disapproval of you by your mother but it is hard to do. It worries you and you can't get away from it. Is that it?"
b. "It's awful. And it's something you've pretty much always done. You don't know why. You've accepted the idea, that your mother doesn't approve of you."
c. "From these introspective symptoms, I should say you're suffering from abnormal feelings of rejection."
d. "Your mother deeply disapproves of you but this intense feeling of rejection has been accepted by you."

58. Choose the response inappropriate in Language.

Cl: A man of 22. Feels that all things that caused his problem have happened in the past. "I can do nothing then. They have resulted in a 'Father Complex.' I sort of enjoy having it, but it keeps me immature.
a. "Although you realize it's the cause of your immaturity you rather like staying with it."
b. "It bothers you a little, huh."
c. "You are sure you don't want to give up being immature."
d. "You're certain you don't wish to give up your idiosyncrasy."
e. "Like new American proverb, 'Boy must take off booties before walking in daddy's shoes.'"

59. Choose the response inappropriate in Meaning.

Cl: "This girl is not good looking at all...she has a sister who is very pretty. But this girl is very popular...she told me she did not feel inferior to the other girls. She is so unlike me. I felt awful, but I didn't have to fight against it."

a. "You believe the one girl is not as nice looking as her older sister, and you don't see how she can stand to be with girls which are nicer in looks. You don't believe this could ever be you."
b. "Because of this dreadful thought of feeling as superior as the others you would feel like a total loss in the same situation."
c. "You felt very emotionally upset over the reactions of the girl you mentioned."
d. "You can't understand why it didn't bother her."

60. Choose the most acceptable response.

Cl: "I guess that winds up my part of it...you haven't anything more to say for yourself?"

a. "You feel there is something more to be said. Is that it?"
b. "I've nothing more to say for myself; is that how you feel?"
c. "You feel that I've missed the boat some place and should dive out with something which I haven't."
d. "You don't care to talk any more."

APPENDIX V

TEST OF ABILITY TO SYNTHESIZE OR COMPOSE SPECIFIED COUNSELOR RESPONSES

PART III Directions: In this section you are to assume you are the counselor responding to the clients' statements. You are to respond by writing out the type of counselor response indicated, avoiding (in items 61 to 70) the typical response errors as much as possible. Use the answer sheet provided to write out your responses.

61. Make a Supportive response.

Cl: "I can't seem to hold a job...I tried fifteen in the last five years. (Names them.)

62. Make an Understanding response.

Cl: "I don't have any problems. I just heard about the service, and came in to see what it's all about."

63. Make an Interpretive response.

Cl: "I have a decision to make, but there are personal problems behind it that a doctor or psychiatrist should probably deal with."

64. Make a Supportive response.

Cl: "Well--I find that I'm troubled by doubts and uncertainties, and things like that, although I don't know of any reason why I should be so concerned. Financially I'm well fixed. I'm very compatible with my husband; have two lovely children; I should be the happiest person in the world."

65. Make a Probing response.

Cl: "Ive had a very unusual life. I don't feel very normal but I want to feel that way."

66. Make an Evaluative response.

Cl: She is a middled-aged woman who tells that she feels lost now her only child is leaving home. Trying to feel the gap is causing problems. Then: "If I don't have a problem, and if you won't go further, all right, I'm old now... I'll just climb climb on a shelf some place and sit."

67. Make an Interpretive response.

Cl: "Well, I tell ya. Ya got to help me with them VA docs; see. I do down there and they say I ain't sick. All the time I'm dizzy and sick. I was in the hospital for four months.

68. Make an Evaluative response.

Cl: Is a woman in nursing training. She has been referred because of resistance to supervision. She feels she has been unjustly treated and speaks at length of it. The counselor speaks of the next interview. She says: "No, I don't think I'll be back. I see the problem now. Thank you. You've helped me a lot."

69. Make a Probing response.

Cl: A young housewife of 25 replies to the counselor's question regarding another appointment by saying, "Well, no. I don't see any reason why I should. Oh, what I'm trying to say is that I can't see that you're doing anything for me since you don't seem inclined to help."

70. Make an Understanding response.

Cl: A woman of 40--has spent the hour recounting, rather shallowly, a number of problems. She says, "By now you should have a pretty good idea of my situation. Now I would like to come back next week and get some answers."

PART IV Directions: The five items below (71, 72, 73, 74, 75) should be answered by writing out the type of counselor response indicated. Use the following client's statement for all five problems:

Cl: "I'm kind of worried about how my grades will turn out."

71. Make an Understanding response with a Content error.

72. Make an Understanding response with a Language error.

73. Make an Understanding response with a Depth error.

74. Make an Understanding response with a Meaning error.

75. Make an acceptable Understanding response.

APPENDIX VI

A "SEMANTIC DIFFERENTIAL" MEASURE OF STUDENT JUDGMENTS OF PROGRAMING METHODS, PROGRAM CONTENT, AND THE CONCEPTS, "STUDYING ALONE", STUDYING HARD "AND GETTING GOOD GRADES"

Instructions

The purpose for this booklet is to measure students' judgments about methods of instruction, content of material, and study habits and characteristics. In marking your answers, please make your judgments on the basis of what these things mean to you. At the top of each page of this booklet is a phrase or sentence that is to be judged according to what you think about it. Below the phrase or sentence is a set of scales.

Read the phrase (or sentence) at the top of the page and make a judgment for each scale0line according to the way you feel about it from your experience. When you have finished all the scales on one page go on to the next page and judge the phrase (or sentence) you find there. Do not turn the page until you have marked all the scale lines.

Here is how you are to use the scales: Suppose the phrase at the top of the page is "Reading while lying down." If you think that "Reading while lying down" is very closely related to the word at one end of the scale, you would place a check mark like this:

happy _X_|___|___|___|___|___|___| sad

or this

happy ___|___|___|___|___|___|_X_| sad

If you feel the phrase is quite closely related to one end of the scale (but not extremely) you should place your mark one space nearer to the center of the scale. If the phrase seems only slightly related to one side as opposed to the other (but is not really neutral) then put your check mark another place nearer to the center. If you feel completely neutral about the phrase, or if the scale does not seem to be related at all to the phrase, place your check mark in the middle space.

Be sure to put your check mark in the middle of one of the spaces on the line and not on the vertical line. Be sure you have a check mark for every scale on every page. Do not omit any. Put only one check mark on each line.

Work at a fairly high speed without puzzling much over individual items. However, do not be careless because we want your true impressions. Make each item a separate and independent judgment.

METHOD I

Completion method. You construct the answer.

Good	☐	☐	☐	☐	☐	☐	☐	Bad
Sweet	☐	☐	☐	☐	☐	☐	☐	Sour
Dirty	☐	☐	☐	☐	☐	☐	☐	Clean
Tasty	☐	☐	☐	☐	☐	☐	☐	Distasteful
Interesting	☐	☐	☐	☐	☐	☐	☐	Uninteresting
Worthless	☐	☐	☐	☐	☐	☐	☐	Valuable
Cruel	☐	☐	☐	☐	☐	☐	☐	Kind
Pleasant	☐	☐	☐	☐	☐	☐	☐	Unpleasant
Bitter	☐	☐	☐	☐	☐	☐	☐	Sweet
Nice	☐	☐	☐	☐	☐	☐	☐	Awful
Fair	☐	☐	☐	☐	☐	☐	☐	Unfair
Difficult	☐	☐	☐	☐	☐	☐	☐	Easy

NOTE: The remaining seven sheets of this test are not included since they are simply repetitions of the twelve bi-polar adjective scales with a different "concept" to be judged heading the paper. The remaining concepts to be judged are:

Method II
Method III
Method IV
The Content of the Material Studied
Studying Alone
Studying Hard
Getting Good Grades

APPENDIX VII

AN INTRODUCTION TO COUNSELING: A 280 FRAME LEARNING PROGRAM

To the Student

You are taking part in an experiment. The subject matter is the field of "counseling," part of the general field of educational psychology. This study is sponsored by the Cooperative Research Program of the U. S. Office of Education. We are trying to find the most effective way to present material to students. If you follow the directions carefully and do the best you can, you will be telling us what we want to know about learning. Some of your friends may be following a slightly different set of directions. If you have any questions, ask the instructor.

This "textbook" lesson is different from any you have had in several ways which will shortly become clear to you. This is not a test, it is a teaching device. You will find no trick questions, though that doesn't mean you won't have to think sometimes. Many answers will seem so obvious to you that you will wonder why we ask for them. If you fill a blank incorrectly, then we, not you, have failed. Obviously then, peeking or changing answers is unnecessary. You will not be graded on your success in going through the material but you will be graded on a test given upon completion of the material.

We welcome your comments (on the bottom or back of your answer sheets) either as you go through a section, at the end of a section, or whenever you feel like telling us what you think. We would like to know what you like about the program as well as what you don't like, what seems well done and what seems badly done.

Gabriel Della-Piana, Project Director
Darrow D. McCarthy, Research Associate

Introduction

At the beginning of his book on "Client-Centered Therapy," Carl Rogers placed the following quotation:

> We mark with light in the memory the
> few interviews we have had, in the
> dreary years of routine and sin, with
> souls that made our souls wiser; that
> spoke what we thought; that told us what
> we know; that gave us leave to be what
> we inly were.
>
> Emerson, Divinity School Address, 1838.

Carl Rogers is the founder of an approach to counseling that has led to tremendous stimulation of research and development in the field of counseling during the past twenty years. In the following material you will learn something of the Rogerian approach (sometimes called Client-Centered or Nondirective), the collaborative approach, and the directive approach to counseling.

What does a professional counselor do in an interview situation? He listens to and observes the client and then responds to the client with gestures and words. In the sense of listening to and responding to someone's statements about his problems, teachers cannot avoid being counselors in an informal way.

This introduction to counseling obviously will not make you a professional counselor. It will however give you a wider repertoire of responses than you have previously had. You should be better able, after completing this unit, to intelligently vary your way of responding to a student when one way is not getting results. The effective counselor uses a wide variety of techniques. He has a considered position on such matters as: What should counseling accomplish? Theoretically, how do people best learn to solve their personal problems within the interview situation? What specific technique can be used in a counseling interview to help people work out their own solutions to their personal problems? To what extent and in what ways has the client profited from your use of certain techniques? The material which follows will give you a start toward answering these questions.

Specific Directions

I. WORK THROUGH THE MATERIAL BY LESSONS. The lessons in the book are in a different form than any books you have likely seen. There are eight lessons. Each page contains small units or parts from several lessons. Each part is designated by the number of the lesson and parts of the same lesson are on successive pages. This contrasts with the typical lesson which reads down the page.

II. ALWAYS DO ONE WHOLE LESSON AT ONE TIME, page by page. When you are going to start a lesson, be sure you have time to finish it. An average of 20 minutes is a good estimate, though you may work as slowly or as rapidly as you like.

III. ALWAYS START BY FILLING IN INFORMATION AT THE TOP OF THE ANSWER SHEET. ALSO, WHEN YOU FINISH A LESSON, RECORD THE TIME.

IV. WHEN A LESSON HAS A PANEL, READ IT FIRST. Accompanying lessons 2 to 7, but not lessons 1 and 8, are informative panels containing definitions, illustrations, etc., which you may need for the lesson and which you may look at while doing a lesson. These panels may be found at the end of the entire program.

V. EACH LESSON BEGINS ON PAGE 1 and GOES TO PAGE 35. Each item in the lesson has a blank, or asks a question. Fill in the blanks on the appropriate space of the answer sheet as you go through a lesson. Do Not Write in the Book. When you finish the part of Lesson 1 on page 1, look at the answer to that item on page 2. Check it if it is incorrect, then do item 1 on page 2. Check answer on page 3, then go to more of lesson 1 on page 3 and so on to the end of lesson 1 on page 35.

VI. WHEN YOU HAVE READ AN ITEM AND RECORDED YOUR ANSWER ON THE ANSWER SHEET TURN THE PAGE. You will find the answer on the inside column of the next page. The answers to page 1 (for each lesson) are on the inside column of page 2, beside the appropriate lesson number.

VII. IF YOUR ANSWER IS NOT THE SAME AS OURS, PUT A CROSS (X) IN FRONT OF THE ITEM NUMBER ON YOUR ANSWER SHEET.* Do not erase since it will help us to improve the material. If you are wrong, then, when you finish the 35 items of one lesson, go back over only the items you got wrong.

VIII. SOMETIMES YOU ARE GIVEN HINTS. Questions can usually be answered in one or two words. Sometimes a synonym or definition of the required word is given in parentheses. Example: __________ (stubborn). Occasionally you will see __________ - __________. This means that the answer is a two part hyphenated word. Often some clue words will be underlined. Other times underlined words are important words that may come up again.

IX. THE SECTIONS MUST BE DONE IN THE ORDER GIVEN. Try to go through each lesson not paying attention to anything else on the page.

*** If you judge your answer to be synonymous with the answer we give, do not mark yourself wrong. However, if it is apparent to you that a certain word is expected, mark it wrong if you did not provide that word.**

ALWAYS START HERE

L-1 has no panel.	Turn this page and begin with Lesson 1 on page 1. Write your answers in the space provided on the answer sheet. The correct answers will appear in the space to the left of Lesson 1 on the following page. Change no answers which you write in.
L-2 has a panel.	Refer to the panel* marked L-2 at the back of this booklet. Read the material on the panel carefully, then continue with Lesson 2 on page 1. Refer to the panel as needed to answer the items in L-2. Change no answers which you write in.
L-3 has a panel.	Refer to the panel marked L-3 at the back of this booklet. Read the material and continue with Lesson 3 in the same manner as for L-2. Change no answers which you write in.
L-4 has a panel.	Refer to the panel marked L-4 at the back of this booklet. Continue in the same manner as for L-3. Change no answers.
L-5 has a panel.	Refer to the panel marked L-5 at the back of this booklet. Continue in the same manner as for L-4.
L-6 has a panel.	Refer to the panel marked L-6 at the back of this booklet. Continue in the same manner as for L-5.
L-7 has a panel.	Refer to the panel marked L-7 at the back of this booklet. Continue in the same manner as for L-6.
L-8 has no panel.	Turn this page and begin with Lesson 8 on page 1.

* Panels begin following page 36.

Answer space

1. Counseling involves a relationship between a _________ and a client in an interview situation.

2. The client, when he sees a counselor for the first time, is not quite clear as to his part or _________ in the counseling process. Thus, the counselor needs to clarify or structure the situation so that the client knows what to expect.

3. A Probing response by the counselor is an attempt to get further _________ from the client or to provoke further discussion.

4. The Understanding response is the most common type of response in using the __________ , or client-centered, approach to counseling.

5. Porter's five categories of counselor responses are: Evaluative, Interpretive, Supportive, _________ and _________.

6. Porter's five categories of counselor responses constitute a part of the _________ technique repertoire.

7. In the formulation of the wording of an Understanding response, it is possible to communicate a _________ attitude than that intended.

8. Three names for the counseling approach originated by Carl Rogers are _________, _________, or _________ - _________.

ANSWERS to Page 1:

counselor	1. In the layman's terms "counseling" and "advising" have often been thought of as synonymous, but the process of counseling is more than giving _________.
role	2. In the initial phase of the counseling process, the Rogerian or ____________ approach is advocated as a device for structuring the situation so that the client understands his _________ in the counseling process.
information	3. A direct question by a counselor (such as: Why did you leave home?) may be considered a(n) _________ response since it is requesting further information and implying that the client might well discuss the point further.
nondirective (or Rogerian)	4. How the client sees himself and how he feels about the situation is the "internal frame of reference." As opposed to how the counselor sees things or the "external _________ _ _________."
Probing Understanding	5. The intent of the Probing response is to seek further _________ or provoke further discussion.
counselor's	6. The counselor should be discriminate and flexible in using the various types of _________.
different	7. There are _________ (number) types of errors which may occur in attempting an Understanding _________.
Rogerian Nondirective Client-centered	8. The four types of errors possible in attempting an Understanding response are _________, _________, Depth, and Meaning.

ANSWERS to Page 2:

advice	1. Advice-giving implies that the clien'ts role is to state a question or problem and that the counselor's _________ is to give an answer or solution.
nondirective (client-centered role	2. The nondirective counselor has a unique approach to _________ the situation so that the client knows his own role. This approach is based on the nondirective counselor's assumption of a ______-directing tendency toward growth in each individual.
Probing	3. If we ask a person why he has come, we are making a _________ response.
frame of reference	4. When the counselor makes an Understanding response he is responding to the "_________ _________ of reference."
information	5. The main drawback to the Probing response is that it may result in _________ reactions, or "resistance" by the client.
responses	6. The nondirective counselor most commonly uses _________ responses.
four (4) response	7. Some errors possible in attempting a(n) _________ response are errors in Content, Language, Depth, and Meaning.
Content Language	8. An understanding response made effectively without any of the __________ (number) types of error, may help to release the client's self-directing tendency toward _________ by freeing him from excessive __________ (rejecting almost everything) and excessive ___________ (accepting almost everything).

ANSWERS to Page 3:

role	1. Some clients enter the counseling situation with the expectation that the counselor's role is that of giving _________ or of being a sympathetic listener. We will talk about three different views as to the role of the _________ and client in the counseling situation: Directive, Nondirective, and Collaborative.
structuring self	2. Since the Rogerian counselor believes in a _________ - _________ tendency toward growth, he structures the situation in a way such that the _________ sees himself as directing the solution of his own problems.
Probing	3. Too many Probing responses reduce the counseling interview to a _________ and answer period.
internal frame	4. How the counselor sees the client and how he feels about the client and his situation is regarded as the "_________ frame of reference."
defensive	5. The nondirective counselor shys away from the use of the _________ response. His most commonly used response is the _________ response.
Understanding	6. An advice-giving, directive counselor trying to find out the facts in a situation might commonly use _________ responses.
Understanding (or Accepting	7. A counselor's _________ which merely repeats the client's words is a response inappropriate in Content. To simply repeat the client's words does not adequately reflect his feeling and perception. Nor does it communicate the attitude "Do I understand you correctly?"
four (4) Growth, Negativism, Dependency	8. A counselor response which merely repeats the client's words is inaccurate in _________.

ANSWERS To Page 4:

advice counselor	1. In the directive approach to counseling, the client sees the counselor's role as that of __________ him what his problem is and how to solve it.
self-directing client	2. By forcing attention on the __________ feelings and perceptions and withholding his own, the counselor __________ the situation so that the client sees his role as a self-directing one.
question	3. See the Panel for L-3 Counselor-Client, Exchange 1. The Probing response is alternative # __________.
external	4. Responding to the __________ frame of reference with an Understanding response conveys to the __________ understanding and acceptance of his feelings and of him as a person.
Probing Understanding	5. When the counselor utilizes the Understanding response he is responding to the client's __________ and perceptions, not just the content of what he says.
Probing	6. It is fairly characteristic for the psychoanalyst to place some meaningful interpretations on a client's feelings and behavior. The psychoanalyst, then, characteristically uses many __________ type responses.
response	7. Client: "I feel like a failure;" Counselor: "You feel like a failure." The counselor's response exemplifies a(n) __________ error, because he merely repeats part of the client's statement. This is __________ a good understanding response.
Content	8. A counselor response which is too technical, crude, or too colloquial is inappropriate in i__________.

ANSWERS To Page 5:	
telling	1. The nondirective or client-centered counselor (sometimes called Rogerian after Carl Rogers, the founder of the approach) acts as a mirror, reflecting the feelings and perceptions of the client as he talks about his problem. In this approach the counselor helps the client to ____________ his own problem.
client's structures	2. The counselor's role in establishing a nondirective framework entails reflecting the client's feelings and ____________ and creating an emotional ____________ of acceptance and ____________.
four (4)	3. See the Panel for L-4 counselor-client Exchange 2. The Probing response is alternative #____________.
internal client	4. Psychotherapy or counseling is a process which occurs ____________ the client--not the counselor.
feelings	5. Since the client's anxiety is rooted in his feelings and ____________, the nondirective counselor tries to get the client to express his feelings more freely by using the ____________ response.
Interpretive	6. The nondirective ____________ may find the Interpretive response of value, though usually later in the counseling process after much ground has been covered and insights gained.
Content not	7. Responding only to the content of what a client has said, as in simply repeating his words, will not accurately convey ____________ of the client and his feelings.
Language	8. A counselor response which inaccurately matches the client's depth, or degree, of affect of feeling is a response inappropriate in Depth. Client (weeping): "I'm so miserable I could kill myself." Counselor: "You are a little upset about it." The counselor response is inappropriate in ____________.

ANSWERS To Page 6:

solve	1. The collaborative counselor differs from the directive counselor and from the nondirective, client-centered, or ____________ counselor in several ways. We shall devote the next lesson to this approach. Essentially, the collaborative counselor is directive after a period of non-directiveness.
perceptions climate (atmosphere) understanding	2. Release of the self-directing tendency toward ____________ is enhanced by an emotional climate of ____________ of threat, or presence of understanding and ____________.
one (1)	3. Whether or not a Probing response is used is up to the judgment of the ____________. At times it may be desirable. Often it will be unwise to use.
within (in)	4. The counselor must deal with the reality of a situation as the ____________ sees it, no matter whether erroneous.
perceptions Understanding	5. When the counselor uses the Understanding response, he can be thought of as a mirror which is ____________ the client's feelings.
counselor	6. When "counseling" our friends, we often tend to sympathize with them or, in other words, use many ____________ responses.
understanding (or acceptance)	7. An Understanding response should reflect the "feeling" and "perceptual" aspect of what the ____________ is saying, not merely the word content.
depth	8. An error in ____________ may exaggerate or minimize the client's feelings or degree of affect.

ANSWERS To Page 7:

Rogerian	1. Rogerian counseling has also been called ____________ or ____________ - __________ . This approach differs from directive or collaborative counseling in part by how it structures the situation for a new client; that is, how it clarifies for the client what is expected of him and what the counselor will do.
growth absence acceptance	2. If the client is extremely ____________ (accepting all the counselor says) or extremely __________ (rejecting all the counselor says) he is not in a condition conducive to self-realization or growth.
counselor	3. Since many clients are reluctant to talk about their personal problems, too many ___________ responses can cause antogonism or defense.
client	4. It is most important in therapy that the _________ develop an awareness of his own errors of perception rather than be forced to accept the interpretations of the ____________.
reflecting	5. By using the Understanding response to reflect the _____________ feelings, the client eventually becomes more ____________ of these feelings and how they affect his adjustment to the immediate problem and his behavior in general.
Supportive	6. A teacher who is quite irritated with a pupil's behavior might give him advice as to what is wrong or what is right; in other words, she might use a lot of ____________ responses.
client	7. A Content error in attempting an Understanding response means that the counselor is reflecting the _____________ of what the client has said rather than the ____________ implied in his communication.
Depth	8. A response inappropriate in Depth may be too deep to match the client's feelings, or it may _____________ be deep enough.

ANSWERS To Page 8:	
nondirective client-centered	1. In the initial stages of counseling, it is important to clarify the role of the counselor and client. This is known as ____________ the situation.
dependent negativistic	2. Nondirectiveness is ideal in the initial phase of counseling since it helps to __________ the situation for the client so that he sees that he is responsible for two functions in the problem solving process: "__________" in the search for a problem solution and "________" as to when an adequate solution has been reached.
Probing	3. A counselor often infers defensiveness when a ______________ "clams up" in reluctance to give information, or when he rationalizes much of the information he gives.
client counselor	4. Counseling attempts to help the client develop an awareness of his own feelings and _________ which is more complete, more nearly correct and less defensive.
client's aware (conscious)	5. Nondirective counseling nears completion when the client has gained sufficient insight into his feelings and behavior that he can solve his own ____________ without the aid of the counselor.
Evaluative	6. The nondirective counselor frowns on the use of the Supportive response in that it may hinder the growth and self-directing tendency and cause the client to become ____________ upon the counselor.
content feeling (perception)	7. If a counselor, in attempting to make an "understanding" response, merely reorders the words of the client, this response is likely to be inaccurate in __________; i.e. the response would be to word content, not feeling content.
not	8. Client (sobbing): "I love him and I want to marry him. . . and now my parents are sending me away." Counselor: "You're a little disturbed by your parents' action?" This response is inappr priate in __________; it is too shallow.

ANSWERS To Page 9:

structuring	1. Carl Rogers developed an approach to counseling which is variously referred to as ____________, _______________ or ____________ - _______ counseling.
structure initiative evaluation	2. "Heuristic Set" is achieved when the client perceives his part or ____________ in the counseling process and accepts responsibility for the functions of ____________ and ____________.
client	3. Too much probing may lead to defensiveness in which the client will __________ talk freely. Thus, probing may hinder the relationship between counselor and client and block growth.
perceptions	4. The starting point for counseling is the reality the client holds, that is his ____________ and ______________, not the way the counselor sees things.
problems	5. The counselor's role in nondirective counseling requires great skill in feeling and seeing things the way the client feels so that he can _________ these feelings back to the client.
dependent	6. The nondirective counselor limits the use of Probing responses because they may result in ______________ reactions, or resistance.
Content	7. An Understanding response reflects the client's ________________. Simply repeating the client's __________, however, does not adequately convey or reflect an understanding of the client's feelings and perceptions.
Depth	8. Responding with inappropriate Depth entails failure to match the client's degree, or depth of ________________.

ANSWERS To Page 10:

Rogerian nondirective client-centered	1. The counselor's role entails more than just giving ____________ and more than just listening sympathetically to the client. His role involves the use of techniques to release the growth potential or self-directing tendency of the client.
role initiative evaluation	2. Nondirectiveness at the outset of the problem-solving process structures the relationship for the establishment of "________ _______."
not	3. When a client suddenly becomes __________, the counselor may have made too many _________ responses.
feelings perceptions	4. By "reflecting" the client's __________ and ____________ with an understanding response, the client may achieve a more accurate picture of himself.
reflect	5. An Evaluative response indicates that the counselor has madea(n) ______________, or judgment, of relative goodness, appropriateness, rightness, etc. of what the client has expressed. Somehow he has implied what the __________ought to do.
defensive	6. The response that would most probably be phrased as a question is the ____________ response.
feelings (perceptions) words	7. To reflect ___________ requires more of the counselor than a superficial understanding of the client's words. He must try to understand the full meaning of what the ________ expressed.
feeling (affect)	8. A response inappropriate in Depth may ________ or minimize the client's feelings or degree of affect.

ANSWERS To Page 11:

advice	1. The nondirective counselor assumes that each individual possesses a self-directing tendency or capacity to solve his own __________, given the appropriate environment.
heuristic-set	2. In functioning nondirectively, the counselor avoids any direct indication of his own feelings, interpretations, and evaluations of the __________ behavior or problem situation.
defensive (quiet) Probing	3. Although __________ responses may cause defensive reactions, defense may be the result of other factors.
feelings perceptions	4. The counselor's Understanding response is aimed at mirroring back or __________ the client's feelings and perceptions so that he may achieve better self-understanding.
evaluation client	5. A judgmental or __________ response is generally the least acceptable of the five categories of responses, since the client is judged rather than understood and accepted.
Probing	6. The response which suggests sympathy or helps to pacify the client is the __________ response.
feeling (perception) client	7. Four types of error in making an understanding response are __________, language, depth meaning.
exaggerate (emphasize, maximize, increase)	8. A response inappropriate in Depth cannot accurately reflect or match the client's __________

ANSWERS To Page 12:

problems	1. The client's part or ________ in a nondirective counseling process is to __________ his own problem.
client's	2. The counselor's gestures, intonations, and general manner of presence play a part, in conjunction with his verbal responses in creating an appropriate emotional climate for releasing the ________ - ____________ tendency toward growth.
Probing	3. The counselor should recognize whether or not defense is the result of _________ responses or other factors in the personal make-up of the __________.
reflecting (or responding to)	4. When a client's feelings and perceptions are accepted by the counselor, and "reflected" back to him, he comes to ___________ them better himself.
Evaluative	5. An accurate or fair judgment of the relative value of a client's action usually can______ be made because the ____________ seldom, if ever, knows and understands all of the facts of the situation.
Supportive	6. The response which is accepting of the client's feelings is the ____________ response.
content	7. The understanding response is important to the "collaborative" counselor because it helps to establish _____________ _______ in the client as a preparation for collaborative technique.
feelings	8. An Understanding response should accurately match the client's ___________ of feeling. The nondirective approach, which makes much use of the ____________ response is recommended as a procedure to precede the __________ approach to counseling.

ANSWERS To Page 13:

role solve	1. The nondirective counselor structures the ________ so that the client sees his ________ as that of solving his own ______________.
self-directing	2. A counselor who disinterestedly sits back and "parrots" the client's expressed words is ____ creating an atmosphere of acceptance and understanding.
Probing client	3. Counselors who are spoken of as "directive" rather than "nondirective" utilize the ________ response quite frequently in gaining information for use in making diagnoses and decisions about the client and his problems.
understand	4. The client's reactions are often defensive, i.e., his feelings may suggest an unwillingness to "reveal" himself to the counselor. This kind of client behavior is more likely when a counselor uses a(n) ___________ response than when he uses a(n) __________ response early in the counseling interview.
not counselor	5. If I tell a person that it was wrong for him not to go to college, I have made a(n) ________ response since I have implied what he ought _____ _____.
Understanding	6. The response which attempts to express to the client his underlying motives and drives, that is, attempts to put meaning into what the client says is the _____________ response. In contrast, the evaluation response implies what one ought to do rather than to think.
Heuristic Set	7. A response more complicated or technical than a client can understand, or which is crude or too colloquial compared with the client's typical language, is a _____________ inaccurate in Language. If a client says: "He got me mad," and the counselor responds, "You were rather exasperated." The counselor used a response inappropriate in _________________.
depth (or degree) understanding collaborative	8. Client: "I get so mad at my mother sometimes..." Counselor: "You have a surging hate for your mother..." This example illustrates a response with inappropriate ________ since it __________ the feeling of the client.

ANSWERS To Page 14:

situation role problem	1.	The nondirective counselor's technique of ________ the situation to clarify the client's role involves reflecting back to the client his feelings and perceptions.
not	2.	When a client is neither excessively dependent on the counselor nor especially hostile or negative and when the client appears to assume initiative for solving his own problems and evaluating the adequacy of the solutions we would say that ____________ _____ has been established.
Probing	3.	In client-centered, or ______________ counseling, Probing _____________ are usually avoided.
probing understanding	4.	A basic assumption in the nondirective approach is that when a client's _____________ and perceptions are accepted and understood, he can come to see through his defenses and his capacity to solve his own _____________ is increased.
Evaluative to do	5.	If I tell a person that he was absolutely in the right for "telling off" his boss, I have made a(n) ______________ response because I have implied that he ought _____ _____ that.
Interpretive	6.	The response which attempts to attach a value judgment to what the client has said is the ___________________ response. But the interpretive response imparts meaning or implies what one ought to think rather than _____ ______.
response language	7.	The counselor who uses the simplest language possible in responding to a client with simple language habits is avoiding a response inappropriate in _______________.
Depth exaggerates	8.	A counselor who either exaggerates or ________ the client's degree of feeling is not likely to communicate acceptance and _____________ of the client.

ANSWERS To Page 15:

Structuring	1. When a counselor reflects the client's ________ and ____________ the client comes to understand his problem more clearly and to take responsibility for solving it.
heuristic set	2. Once heuristic set is established, the way is clear for moving away from a strictly nondirective structure and into a _____________ structure in counseling.
nondirective (or Rogerian) responses	3. The emphasis in client-centered counseling, as implied, is on the feelings of the ___________.
feelings problems	4. Gaining a better understanding of his _________ and perceptions in a non-threatening atmosphere enables the client to reduce his defenses and to ___________ his own problems more effectively.
Evaluative to do	5. In nondirective counseling, the person who should make the value judgment is the __________, not the counselor.
Evaluative to do	6. Refer to Panel for L-6, Exchange I. The Evaluative response is alternative #________, and the Interpretive response is alternative #____________.
Language	7. A response inappropriate in __________ may be too complicated or technical, crude or too colloquial.
minimizes understanding	8. A counselor response should have ________ rather than shallowness in response to deep feelings and ____________ rather than depth in response to shallow feelings.

ANSWERS To Page 16:

feelings perceptions	1. In a nondirective, Rogerian or ______ - ________ counseling situation, the client is assumed to have a self-directing __________.
collaborative	2. The collaborative structure in counseling should be preceded by the ____________ approach to allow the establishment of _______ _____.
client	3. In Rogerian, or ______________ counseling, information is volunteered by the client; the counseloracts to help the client understand his _____________ and perceptions as revealed by such volunteered information.
feelings solva	4. Counselor responses should be directed to the ________ frame of reference since growth occurs _________ the client.
client	5. There are conceivably situations that might require the ___________ to make a judgmental or _____________ response. Such situations might include those in which the client contemplates an act against society or against the counselor.
4 (four) 3 (three)	6. Panel for L-6, Exchange I. The Probing response is alternative #_______, and the Supportive response is alternative #_________.
Language	7. Understanding and acceptance will _______ be communicated to the client if the response is phrased above a level that the _________ can comprehend.
depth shallowness	8. Client: "Boy, I just can't stand that *!*!/ guy." Counselor: "You don't particularly like him, is that it?" The counselor's response is too ___________.

ANSWERS To Page 17:

client-centered tendency	1. The client in a nondirective counseling situation is helped to see his __________ as that of solving his own problem.
nondirective heuristic set	2. The strictly directive approach to counseling is not as highly recommended as the nondirective and __________ approaches.
nondirective (or client-centered) feelings	3. Information volunteered by a client is used to help him think more constructively in the solution of his own __________.
internal within	4. How the client sees a situation is real to him even if it is ________ actually a true picture of the situation from an external ________ of __________.
counselor Evaluative	5. Since the occasions calling for an Evaluative response are very rare, usage of the Evaluative response should be very ________.
one (1) five (5)	6. Panel for L-6, Exchange I. The Understanding response is alternative #__________.
not (or never) client	7. A counselor who is crude or too colloquial in responding makes a(n) __________ error. The language he selects should communicate, but it should also be in keeping with his professional role and not far out of keeping with the language habits of the client.
shallow	8. A response which fails to match the perceptions of the client is a response inaccurate in Meaning. Client: "I need another $150 to make it through this school term and pay off my debts." Counselor: "You'd like a job so you can earn money to finish the school term." The counselor's statement is inappropriate in ________ because it adds meaning to the client's statement. (The client didn't say nor fully imply that he wanted a job.)

ANSWERS To Page 18:

role	1. The technique by which a nondirective counselor aids a client in taking responsibility for his own problems is through use of mirroring or ____________ back to the client, his ________ and ______________.
collaborative	2. The directive counselor is concerned with fact finding, diagnosis, and decision making so that he can __________ the client his interpretation of the problem.
problems	3. Although getting factual _____________ from the client is of importance to the client-centered _______________, stress is placed on the client gaining insights into his own attitudes, feelings, and perceptions.
not frame reference	4. The primary aim of nondirective counseling is a release of the client's ______ - __________ tendency toward growth.
rare (limited, infrequent)	5. The Evaluative response is used rather ________ in our every-day lives, but the counselor should guard against its frequent use in the counseling interview.
two (2)	6. Panel for L-6, Exchange II. The Understanding response is alternative #___________.
Language	7. Rapport between counselor and client cannot be established if the language used is such that the client does not _____________ it.
meaning	8. When the counselor's "understanding" response adds or omits meaning from the client's statement, he has made an ___________ in meaning.

ANSWERS To Page 19:

reflecting feelings perceptions	1. Often it is the discomfort created by the conflict of a problem and the inability to reach a satisfactory solution that originally leads a person to seek ____________.
tell	2. The nondirective counselor is concerned with ____________ feelings of the client to help him get insights into his own problems.
information counselor	3. Information concerning ___________ and perceptions is stressed by the Rogerian counselor since he is interested in how the __________ sees the world, not how he himself sees it.
self-directing	4. In collaborative counseling, the relationship of counselor to client is one of warmth and ___________. After heuristic set is established, the counselor is thought of as giving ____________ assistance.
frequently (commonly)	5. An Interpretive response is an attempt on the part of the counselor to impart meaning to the communications of the __________. Somehow he has implied what the client ought ___ __________.
one (1)	6. Panel for L-6, Exchange II. The Evaluative response is alternative #_________. The interpretive response is alternative #______.
understand	7. ______________ which is too complicated and technical for the client's understanding may arouse defense, as it may make the client uncomfortable to be with the counselor.
error	8. There are several ways that meaning may be ______________ or omitted in attempting to match a client's perceptions.

ANSWERS To Page 20:

counseling	1. Even when a client sees his _______ as that of solving his own problem, if he has too much anxiety or conflict, his emotion may interfere with his solution of the problem.
reflecting	2. After establishment of ___________ ______ the collaborative approach consists of both client and counselor looking together at an objective problem.
feelings client	3. Rogerian counselors are interested in the client's feelings and ___________ since they are often at the root of unsolved problems.
respect consultative	4. The counselor conveys acceptance by responding to the client's internal frame of reference, i.e., by _____________ the client's feelings about himself and the situation back to him for consideration.
client to think	5. The _______________ response attempts to show the client why he might have done something or felt some way or what his underlying motives probably were.
five (5) two (2)	6. Panel for L-6, Exchange II: The Supportive response is alternative #_________, and the Probing response is alternative #_________.
Language	7. For clients with relatively simple language habits, a counselor may avoid the dangers of inappropriate language by responding in the __________ language possible.
added	8. Meaning may be _________ or _________ by completing a sentence for the client and leaving out part of the client's statement.

ANSWERS To Page 21:

role	1. A person seeing a rattlesnake at close range may run, though standing still might be the best insurance against attack. This is an example of the _________ influence of emotion in solving some ___________.
heuristic set	2. In the ____________ approach the counselor's activities are directed toward the problem "out there" and not toward the client personally. In this approach the counselor is seen as a consultant whose advice may be considered and either accepted or ____________.
perceptions	3. As viewed by Rogerians, _________ may force information from a client before he is ready to volunteer it, or understand and use it. In such cases the client may become __________ and go silent.
reflecting	4. Counselor responses which reflect the client's feelings are classified as ____________ responses. Responses which indicate a desire for further information are classified as _______________ responses.
Interpretive	5. Psychoanalytic therapists utilize the __________ response to a great extent. However, its use requires considerable insight and training by the analyst, since it requires ability to explain or interpret the _________ behavior.
four (4) three (3)	6. Panel for L-6, Exchange III. The Interpretive response is alternative #_________, and the Probing response is alternative #_________.
simplest	7. Client: "I don't know why, but I just can't seem to settle down and study." Counselor: "I see, you don't comprehend your inability to comply with the demands of the course work." The counselor's response is inappropriate in __________________.
added omitted	8. _____________ may be added or omitted by respondin only to the last thing said by the client.

ANSWERS To Page 22:

disruptive (disturbing) problems	1. A client who is afraid or embarrassed to show his real feelings and perceptions may "clam up" as a defense against the pain of revealing them. This is an example of the __________ influence of emotion on solving one's personal __________.
collaborative rejected	2. In contrast to the strictly Rogerian or ________ approach, the ______________ approach to counseling allows the counselor freedom to give his own views as a consultant after __________ ______ has been established in the client.
Probing defensive (anxious)	3. Although Rogerians generally frown on the use of ___________ responses, there are some instances where they find such responses quite useful, in fact, often necessary.
Understanding Probing	4. Panel for L-4, Exchange 1. The Understanding response is alternative #__________ because it reflects the feeling and perceptions of the client.
interpretive client's	5. Extensive use of the Interpretive response may lead to nothing more than a lot of guessing about the problems and motives of the ________.
four (4) one (1)	6. Panel for L-6, Exchange III. The Understanding response is alternative #________, and the Supportive response is alternative #_______.
Language	7. Errors of Depth, Meaning, Language and ________ are errors in the formulation or wording of the ____________ type of response.
meaning	8. A Meaning error may result from responding to material presented by the client for illustrative purposes only. Client: "The course is all right but I don't like it. It's like sitting down at a big dinner when I don't like the food." Counselor: "There are some foods you don't especially like." The counselor has made an __________ in __________.

ANSWERS To Page 23:

disruptive problems	1. Not only in protecting oneself from physical dangers (such as rattlesnakes) but also in solving personal problems through gaining a clearer self-understanding, we may be hampered by the __________ influence of emotion arising from the problem situation.
nondirective (client-centered) collaborative heuristic set	2. In the collaborative approach, just as in the __________ approach, it is the client who takes the initiative as to what areas shall be explored in the counseling situation.
Probing	3. Whether or not a Probing response is appropriate will depend on __________ things, such as the client-counselor relationship, the particular interview situation, and the counselor's views of the counseling process.
one (1)	4. Panel for L-4, Exchange I. The Probing response is alternative #__________.
client	5. The __________ counselor uses few __________ responses early in the counseling process because at that state he does not have all the facts and the client is probably not yet ready to emotionally accept interpretation of his behavior.
five (5) three (3)	6. Panel for L-6, Exchange III. The Evaluative response is alternative #__________.
Content Understanding	7. A counselor's "understanding" response which is too technical, crude, or too colloquial is inappropriate in __________ whereas a response which simply repeats the client's words is inappropriate in __________.
error Meaning	8. Out-and-out interpretation, particularly if too premature, may result in an error of __________. Example: Client: "I can't remember his name." Counselor: "You have a dislike for the man and thus you forgot his name."

ANSWERS To Page 24:

disruptive	1. If a client is so anxious or emotional that he cannot think about or talk about his problem, he is not likely to be able to ________ his own problem.
nondirective (Rogerian or client-centered)	2. The __________ counselor directs the course of the counseling process; the __________ counselor reflects the client's choice of feelings; and under the __________ counseling approach the counselor acts as a consultant to the client in outlining a course of prpblem attack.
many (or several)	3. When a counselor finds it appropriate to move toward a collaborative structure in counseling, ____________ responses might occur more freely.
four (4)	4. Panel for L-4, Exchange 2. The Understanding response is alternative #__________.
nondirective (or client-centered, Rogerian)	5. Late in the counseling process the nondirective counselor may, on occasion, have call to impart meaning by use of ___________ responses, but only after much ground has been covered and insights gained by both client and counselor.
tow (2)	6. No one response is the _________ correct response at all times and in all situations.
language content	7. An acceptable understanding response should reflect the client's __________ and _________. To reflect or repeat only the client's words is a(n) ______________ error.
Meaning	8. Two ways of adding or ___________ meaning are finishing a sentence for the client, and out-and-out interpretation of the significance of a client's statement.

ANSWERS To Page 25:

solve	1.	When a nondirective counselor sees that a client is very hesitant in talking about his problem he may say: "It is a little difficult to get started." The counselor is really acting as a mirror, __________ the client's own feeling. In so doing he shows the client that his feelings are understood and accepted.
directive nondirective (etc.) collaborative	2.	At the outset of the counseling process, a __________ approach helps to structure the client-counselor relationship. This approach is recommended until the establishment of __________ __________.
Probing (or other)	3.	The "directive" counselor utilizes the ______ response to gather information for use in making decisions about the client and his problem.
four (4)	4.	Panel for L-4, Exchange 2. The Probing response is alternative #__________.
Interpretive	5.	Since the client is usually pent up with __________ when he comes for __________, the counselor is often prone to assume a sympathetic, and supportive role.
only (one)	6.	The appropriateness of the response a __________ makes will depend on the client, the client-counselor relationship, the circumstances of the interview, and the counselor's theoretical leanings.
feelings perceptions content	7.	An acceptable Understanding response should communicate understanding and acceptance of the client's feelings. Responses inappropriate in Depth, Meaning, __________ or __________ may not communicate this adequately.
omitting	8.	Responding to illustrative material, or responding to the last thing said by a client contribute to __________ errors.

ANSWERS To Page 26:

reflecting	1. When feelings are reflected by the counselor and thereby accepted and understood, they are brought out so that they are available to the __________ for his use in solving his own problem.
nondirective heuristic set	2. Disruptive states of anxiety fear, anger, and other emotions are best reduced in counseling by an emotional climate characterized by an __________ of threat and a presence of __________ and __________.
Probing	3. The nondirective counselor somtimes utilizes the __________ response to ask necessary __________ that will keep the interview progressing toward problem solution.
one (1)	4. In an Understanding response the intent is to __________ back to the client what he is saying and how he feels about it.
emotion (feelings anxiety, conflict) counseling	5. The main fault of the Supportive response is that it may produce dependence on the __________ for support, a result completely antithetical to nondirective or collaborative counseling which stress fostering independent growth and the self-direction of the client.
counselor	6. The skilled counselor knows __________ a particular response is most appropriate.
Content Language	7. For the typical client who does not use elegant or complex language, a counselor may avoid responses inappropriate in __________ by using the __________ language possible.
Meaning	8. Failure to match a client's perceptions involves omitting or __________ meaning.

ANSWERS To Page 27:

client	1.	The technique of mirroring or __________ the feeling and perceptions of a client creates an atmosphere of acceptance and understanding which is a necessary condition for releasing the self-__________ tendency of the client.
absence acceptance understanding	2.	In the nondirective approach the client's own __________ and perceptions are brought out and made available to the client so he can think about them in solving his problem.
Probing questions (or information)	3.	In the __________ counseling situation, many decisions are made by the counselor, while most decisions are made by the client in __________ and __________ counseling.
reflect	4.	In a Probing response the intent is to seek further __________, or to provoke further __________ along some line.
counselor	5.	Friends, in "counseling" one another, often tend to sympathize with and reassure each other. In other words __________ responses are used quite commonly by many non-professionals in "counseling" with their friends.
when	6.	The same approach may not work with every client, hence a __________ must be flexible as to which responses he uses and __________ he uses them.
Language simplest	7.	By reflecting feelings and perceptions rather than just repeating the __________ of the client, responses inappropriate in __________ may be avoided.
adding	8.	A response inappropriate in Meaning fails to __________ the client's perceptions.

ANSWERS To Page 28:

reflecting directing	1. The technique of reflecting the feelings and ______________ of the client really has two effects. First it structures the situation so that the client sees his role as that of solving his own problem. Secondly, it creates a threat-free atmosphere of ____________ and ______________ which is conducive to clarification and solution of one's own problems.
feelings	2. A client may say "I don't like it when he calls me on the phone." When the counselor responds, "You resent..." he is using reflection to bring out the clients __________ and __________ so he can think about them and solve his own problem.
directive nondirective (or etc.) collaborative	3. The Rogerian counselor is _____ concerned with gathering facts to solve or diagnose a problem; he is concerned with helping the client to understand himself and to develop the ability to solve his own __________.
information discussion (elaboration)	4. A nondirective counselor would use more ______ responses than ___________ responses.
Supportive	5. The nondirective counselor would be most sparing in his use of all types of responses except _____________ responses, though late in the counseling process he may, on occasion, have call to use other responses more frequently than in the early stages.
counselor when	6. In the ________ counseling situation, decisions are made by the counselor, while decisions are made by the client in __________ and collaborative counseling.
words Content	7. Though a counselor may attempt to make an Understanding response, errors of Depth, Meaning, ___________ and ____________ may so alter the response that it cannot be classified as Understanding any longer.
match (reflect)	8. Failure to match the depth of a client's feelings involves __________ or ________ his feelings.

ANSWERS To Page 29:

perceptions acceptance understanding	1. Client: "My teacher is down on me." Counselor: "You feel that your teacher is against you." The counselor's reflection of the ______ and ________ of the client rather than agreeing with the client or telling him what to do, helps the client to take responsibility for solving his own ________. It throws the problem gently back to the client.
feelings perceptions	2. Client: "I am going to fail all my subjects because I can't learn to study." Counselor: "You feel that it is your inability to learn study habits that will cause your failure." The counselor is using the technique of _________ the client's feelings.
not (or never, seldom problems	3. The ________ counselor is concerned with fact-finding diagnosis, and decision-making; the _________ counselor is interested in feelings, attitudes, the client's viewpoint, and insights into his problems and behavior.
Understanding Probing (other)	4. Understanding responses should reflect the ________ and ___________ of the client in such a way as to let him feel accepted and understood.
Understanding	5. The intent of the __________ response is to reassure the client, to reduce the intensity of feeling, or in some way to pacify him.
directive nondirective (or etc.)	6. After heuristic set is established, the ______ counseling structure is recommended.
Content Language	7. The focus of the acceptable _________ response should be on the client's feelings, and perceptions so that these can be reflected back to the client for consideration.
exaggerating minimizing	8. In attempting a(n) ___________ or accepting response a counselor may make more than one type of _________ within the same response.

ANSWERS To Page 30:

feelings perceptions problem	1. Client: "My teacher is down on me." Counselor: "You feel that your teacher is against you." The client is not criticized for his feeling nor does he get agreement. The counselor is simply saying "This is how you feel." In this way he demonstrates his __________ and __________ of the client and in this threat-free atmosphere helps to release the client's self-________ tendency.
reflecting	2. Once ___________ ______ is established the counselor can feel more free to give of himself in the capacity of a partner helping the client overcome a problem.
directive nondirective (or client-centered, Rogerian)	3. Although the __________ response is common in traditional directive counseling, it may result in antagonism and defense at the cost of gaining such useful __________.
feelings perceptions	4. Nondirective counseling attempts to foster more complete self-understanding on the part of the client, by focusing on the _________ frame of reference.
Supportive	5. Client: "I just know he hates me..." Counselor: "Now, don't feel badly about it. Everything will turn out all right." The counselor response is ___________.
collaborative	6. Client-centered therapy attempts to help the client develop a(n) ________ of his own perceptions which is more complete, more nearly correct and less defensive.
Understanding	7. Errors in Content, Language, _________ and ___________ may defeat the purpose of reflecting back to the ___________ his feelings and perceptions.
Understanding Error	8. Client: "Boy, if I flunk this semester, I don't get another nickle from my dad!" Counselor: "Not another nickle." Inappropriate in ___________ and meaning because it simply repeats words and omits some meaning.

ANSWERS To Page 31:

acceptance understanding directing	1. Reflecting the client's feelings and perceptions has two main effects: (a) helps him to see himself as responsible for _________ his own problem and (b) creates a threat-free atmosphere of _________ and ___________ which is necessary for the release of growth in ability to solve one's own problems.
heuristic set	2. Heuristic set has occurred when the client assumes ultimate responsibility for two functions in the relationship: _______ and ______, and when he is neither extremely ______ (accepting all the counselor says) nor ________ (rejecting everything).
Probing information	3. Probing responses early in the counseling relationship are likely to structure the situation so as to give the client the impression that seeing a counselor is like seeing a physician. That is, the client may come to see his part or _________ as answering the counselor's questions and ______ advice from the counselor.
internal	4. Through making understanding responses the counselor creates an emotional atmosphere of _______ which fosters growth in the client.
Supportive	5. Extensive use of Supportive responses may result in client being excessively ______ on the counselor for support.
awareness (or understanding)	6. The counselor should be discriminate and flexible in using the various _________ since these are part of his technique repertoire which vary in effectiveness under different circumstances.
Depth Meaning client	7. Complete understanding of the client's remarks includes an understanding of the depth and meaning of his remarks as well as an understanding of the specific _______ spoken.
Content	8. Client: "I think that teacher's got it in for me--he just hates me." Counselor: "You feel he dislikes you and you are worried about what appear to be paranoid tendencies in yourself." Inappropriate in ______, ______, and _______.

ANSWERS To Page 32:

solving acceptance understanding	1. The heart of the nondirective process is reflection which, in part, conveys an _______ and __________ of the client's feelings and perceptions.
initiative evaluation dependent negativistic	2. Heuristic set consists of the client feeling he is ultimately responsible for taking the ____________ in searching for solutions and making __________ as to when adequate solutions are reached.
role getting (receiving)	3. Probing often furthers the tendency on the part of some clients toward remaining silent or defensive. Where this occurs the emotional climate is _____ conducive to growth.
acceptance (or understanding)	4. Counseling begins with the reality of the situation as the ________ sees it, not with the perceptions of the _________. In collaborative counseling the client is considered an expert on ______ particular feelings and the counselor an expert on _________ in general.
Dependent	5. Probably the least acceptable response for the nondirective counselor is the judgmental or ___________ response; the most acceptable and most used is the ________ response.
responses	6. No one response is always the _________ response for all situations and all clients.
words (Language)	7. Unlike the directive counselor, the _________ counselor functions somewhat like a ______ which reflects back to the client a clarified image of himself.
Language Meaning Depth	8. Client: "She always seems angry with me." Counselor: "Her underlying hostilities seem frequently to be overtly manifested toward you?" The counselor's reply is inappropriate in ___________, as well as Depth and Meaning.

ANSWERS To Page 33:

understanding acceptance	1. Understanding and acceptance are conveyed in part by ____________ the client's ________ and ________ about himself and his problem, as if to say "As I see it, you feel this way..."
initiative evalutions	2. The client often comes to the counselor without a clear idea of his part or __________ in the counseling process. Through nondirective or collaborative type counseling, the client soon learns that he himself must take the initiative in _________ his own problems.
not	3. When a client has not expressed himself clearly, mild probing can serve occasionally to show the counselor's intent is to get the client to __________ the point a little further.
client counselor his feelings	4. Basic to making an effective __________ response, is reflecting back to the client his expressed feelings.
Evaluative Understanding	5. Value judgments should be made by the ________ and avoided by the ____________.
correct (or right)	6. The collaborative counselor may use mostly ______________ responses until heuristic set is established. After that, he acts as a consultant and may use _________ types of responses.
nondirective (or etc.) mirror	7. The nondirective counselor, to be effective, must have full mastery in making _________ responses without errors of depth, meaning, language and _____________.
Language	8. The four types of errors commonly made in attempting an Understanding response are: ________, ___________, _________, and ________.

ANSWERS To Page 34:

reflecting feelings perceptions	1. The ______________ counseling approach assumes that the self-directing tendency is inherent in the individual and fostered by an atmosphere of __________ and __________.
role solving	2. The nondirective counselor assumes that each person has a ______ - __________ tendency toward growth and that this tendency is best released through an atmosphere in which threat is __________.
discuss (develop, elaborate	3. When a client has not made himself clear, a response such as "If I understand you, you feel that..." is usually often better than a __________ response. Such a response often results in getting further information without producing defensiveness.
Understanding	4. Since growth occurs *within* the client, counselor responses should intially be directed toward the ____________ frame of reference.
client counselor	5. Since a supportive response may temporarily reduce anxiety in a very tense person, we may say that a _________ response might be acceptable where a client is too emotional to think or act constructively in the interview situation.
understanding other (many, probing, etc.)	6. The same approach may not be appropriate with every client hence a counselor must be ____________ in his choice and use of responses.
Understanding Content	7. The counselor should direct his attention to how the _________ sees and feels about things; this the counselor infers from the client's way and manner of expressing himself.
Content Language Depth Meaning	8. Porter's five categories of counselor response are: _________, _________, _________, _________, and _________.

ANSWERS To Page 35:

nondirective (Rogerian, client-centered) acceptance understanding	1.	You have finished Lesson One (L-1). Refer to Page i and begin Section L-2 at the first of this booklet.
self-directing absent	2.	You have finished Lesson L-2. Refer to Page i and begin Section L-3 at the first of this booklet.
Probing	3.	You have finished Section L-3. Refer to Page i and begin Section L-4 at the first of this booklet.
internal	4.	You have finished Section L-4. Refer to Page i and begin Section L-5 at the first of this booklet.
Supportive	5.	You have finished Section L-5. Refer to Page i and begin Section L-6 at the first of this booklet.
discriminate (wise, flexible)	6.	You have finished Section L-6. Refer to Page i and begin Section L-7 at the first of this booklet.
client	7.	You have finished Section L-7. Refer to Page i and begin Section L-8 at the first of this booklet.
Probing Understanding Supportive Interpretive Evaluative	8.	You have finished Section L-8, the last section. If you have time left go back and review any sections with which you had difficulty or missed an excessive number of answers. A test will be given on this material, so make sure you are familiar with it.

PANEL FOR L-2*

Read This and Refer to it as Needed

If a student says "Where is the Dean's Office?' The counselor certainly doesn't say "M-m-m, I see-ee-ee, you are wondering where the Dean's Office is?" It is possible for a client to mention the real problem first. However, in the initial stages of an interview a client's first or presenting problem often does mask his real problem. For this reason, and others, a common view of the counseling process today is the collaborative view. In this view, non-directive counseling must precede the collaborative process.

When is a client ready for the collaborative process? Not until he actually feels that he, rather than the counselor, is ultimately responsible for two functions in the problem solving process: Initiative in the search for a solution to his problem and evaluation as to when an adequate solution has been reached. This feeling of being responsible for initiative and evaluation is called "heuristic set" after the Greek word meaning "to discover." The counselor can tell when heuristic set has been established by some simple cues: Namely, when the client is neither extremely dependent (accepting all the counselor says) nor highly negativistic (rejecting everything). When the client reaches this stage he can look at the counselor as a "consultant." The client then may accept some interpretations of the counselor and reject others, depending on how they appear to him to fit into the solution of his problem. But this stage, where the counselor may propose solutions, give interpretations, etc., cannot adequately begin until the client is free from interfering emotional states resulting in extreme negativeness or dependance.

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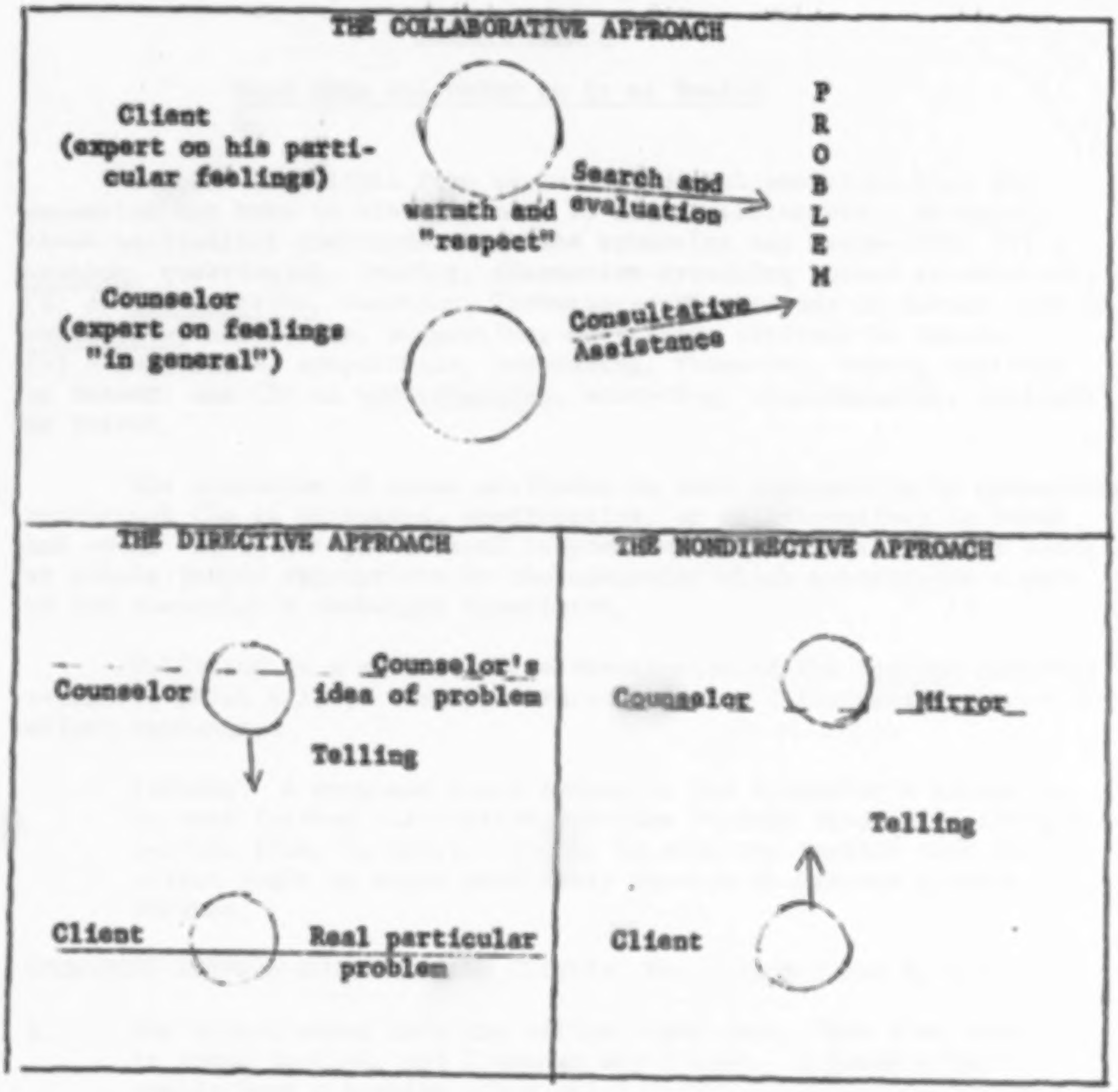
*Adapted from Parry, William G. Jr. and Estes, Stanley G. "The collaboration of client and counselor." in Mowrer, O. H. (Ed.) Psychotherapy: Theory and Research. N. Y., Ronald Press, 1953.

(PANEL FOR L-2, Continued)


THE COLLABORATIVE APPROACH
Client
(expert on his particular feelings)
warmth and "respect"
Search and evaluation
P
R
O
B
L
E
M
Counselor
(expert on feelings "in general")
Consultative Assistance
THE DIRECTIVE APPROACH
Counselor
Counselor's idea of problem
Telling
Client
Real particular problem
THE NONDIRECTIVE APPROACH
Counselor
Mirror
Telling
Client

PANEL FOR L-3

Read This and Refer to it as Needed

Porter* identifies five basic attitudinal positions that the counselor may take in his responses to client statements. In brief, these attitudinal positions which the counselor may assume are: (1) a probing, questioning, leading, discussion-provoking intent or attitude; (2) an interpretive, teaching, "pointing-out" attitude or intent; (3) an evaluative, corrective, suggestive, moralizing attitude or intent; (4) a supportive, sympathetic, reassuring, tempering, easing attitude or intent; and (5) an understanding, accepting, comprehending, attitude or intent.

The operation of these attitudes in most therapeutic or counseling approaches (be it directive, nondirective, or collaborative) is frank and open. It is the intentional response on one or more of these bases at points judged appropriate by the counselor which constitutes a part of the counselor's technique repertoire.

Following is a more complete description of the Probing response category, which will be discussed first, and two illustrative counselor-client exchanges:

> Probing: A response which indicates the counselor's intent is to seek further information, provoke further discussion along a certain line, to query. He has in some way implied that the client ought or might profitably develop or discuss a point further.

EXCHANGES BETWEEN COUNSELOR AND CLIENT: Re: Items 5 and 6, L-3

1. The client comes into the office, then says, "Now I've come, it seems foolish, and I wonder why I came. I guess I don't really have a problem after all."
    1. "Many clients feel silly when talking to a counselor."
    2. "Your feelings indicate underlying tension."
    3. "Your feelings have changed since deciding to come."
    4. "What was it you intended to talk about?"
    5. "You should not let your feelings stop you from talking."

2. "Just what are you? A doctor, a psychologist, a psychiatrist, a social worker, or just what?"
    1. "Why do you ask? Does the word psychology bother you?"
    2. "You don't understand what kind of a doctor I am, is that what you mean?"
    3. "I am a psychologist and I have been trained to understand and help people to solve problems that interfere with their happiness."
    4. "Don't let the word psychologist bother you, I am sure we can give you some help by talking over your problem."
    5. "You feel it is important that you know what kind of a person I am before you proceed with your problem."

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*Elias H. Porter, An Introduction to Therapeutic Counseling, Houghton-Mifflin Co., Chicago, 1950.

PANEL FOR L-4

Read This and Refer to it as Needed

The most common type of response in nondirective counseling is the Understanding response (defined below), which is directed at the client's feelings and perceptions. By responding to the emotional-perceptual aspect of a client's communication, the counselor hopes to create an atmosphere of acceptance and understanding conducive to client growth and change. In this nondirective, client-centered, approach to counseling, the emphasis is on responding to the "internal frame of reference," i.e., how the client sees himself and how the client feels about the situation. This is in contrast to the "external frame of reference," i.e., how the counselor sees the client and how the counselor feels about the client's situation.

Foremost among the reasons for distinguishing between these two frames of reference is that psychotherapy is a process which occurs within the client--not the counselor. The counselor is forced to deal with the reality the client holds no matter how much insight he has as a counselor into the errors of perception the client makes.

> Understanding: A response reflecting feelings and perceptions which indicates the counselor's intent is to so respond as in effect to ask the client whether the counselor understands correctly what the client is "saying," how the client "feels" about it, how it "strikes" the client, how the client "sees" it.

EXCHANGES BETWEEN COUNSELOR AND CLIENT: Re: Items 23-26, L-5.

1. The client is seated and then begins: "This is my first experience at something like this and I don't know quite how to start."
    1. "You would like to talk about your problem but it's hard for you to find a place to begin."
    2. "You might begin with the thing that is troubling you most. Perhaps we can solve the lesser problems as we go along."
    3. "I guess we all have problems sometimes and we don't know where and how to begin.
    4. "Would you like to start by telling me why it was you wanted to come?"
    5. "These problems have their roots early in our lives."

2. "Well, I don't really know why I'm here. I've been having trouble with my studies but I know why that is: "I justhaven't been buckling down to work. Anyway, the Dean said I'd have to come over here, so here I am."
    1. "Do you feel there is any reason why you haven't been able to "buckle down" to studying? Is something bothering you?"
    2. "You know why you've been having trouble with your studies."
    3. "Maybe we can work this problem out together. I have a few suggestions I could make."
    4. "You're having trouble with your studies and it's been bothering you, so the Dean sent you here to talk to me."
    5. "If you're having trouble with your studies, I think we ought to get to the bottom of it all, and see what can be done about it."

PANEL FOR L-5

Read This and Refer to it as Needed

Probing and Understanding responses are but two types of responses which a counselor might utilize in the counseling interview. In addition, the following responses may be part of the counselor's repertoire:

> Evaluative: A response which indicates the counselor has made a judgment of relative goodness, appropriateness, effectiveness, rightness. He has in some way made a value judgment regarding what the client thinks, has done, or intends to do, therefore implying what the client ought, or ought not, to do.
>
> Interpretive: A response which indicates the counselor's intent is to teach, to impart meaning to the client, to show him. He has in some way interpreted, or placed meaning on the client's behavior or feelings so as to imply what the client might or ought to think about them.
>
> Supportive: A response which indicates the counselor's intent is to pacity, to reduce the client's intensity of feeling, to reassure. He has in some way implied that the client need not feel as he does.

Although the nondirective counselor will lean toward the useof the Understanding response predominantly, he must remain felxible and discriminative in his use of the other types of counselor responses. Judgment of appropriateness, in the final analysis, is up to the counselor, and effectiveness will depend upon his skill. Whether or not any given response is appropriate is dependent on the particular personality of the client, the client-counselor relationship, the particular interview situation, and the counselor's theoretical leanings (e.g. directive, nondirective, collaborative). The counselor, therefore, must exercise judgment and skill to maximize his effectiveness in the counseling process in using the various types of counselor responses.

PANEL FOR L-6

Read This and Refer to it as Needed

EXCHANGES BETWEEN COUNSELOR AND CLIENT UTILIZING PROTER'S FIVE RESPONSE CATEGORIES.

I. Client: "I always feel uncomfortable around the students in this school. They seem so stuck up. Out in California, I seemed to get along all right with the kids--but maybe I'm slipping some way."

Counselor:

1. "Do you show yourself to be as sociable here as you did in California?"
2. "Although the rest of the students seem sort of stuck up, you sometimes wonder whether you're the one that is slipping."
3. "It might be a good idea to analyze yourself a little more carefully to see why you are not getting along as well."
4. "It is probably your own fault in now showing yourself to be very friendly here in our school. Perhaps you should try to be more sociable yourself."
5. "Maybe you really don't have too much to worry about, especially since you got along well in California. Time will probably take care of it."

II. Client: "I'm kinda under a pressure. My father seems to think that now I am twelve years old I ought to decide exactly what vocation to play for. But I just don't know. I'd rather take a variety of subjects in school for a while and maybe I'd know better what to do then.

Counselor:

1. "You feel sort of pushed forward a little too fast before you are ready to make a vocational choice on your own."
2. "You may be hesitating to choose because of fear of failure."
3. "Does your father have any idea as to what would be best for you to go into?"
4. "I can understand how you feel--no boy likes to be pushed into decisions like that before he is ready."
5. "Your father probably has a good idea on this matter, because it is important for you to make up your mind early on things like this."

III. Client: "My boy friend is going into the army as soon as school is out. He'll be past 18 you know, and although I'm just 17, we just feel we should get married before he leaves, but mother just goes into a rage when I talk about it. Sometimes we have terrible arguments about it, and I feel now like it would be best to leave home altogether."

Counselor:

1. "What makes your mother resent the idea so much?"
2. "It might be a good idea to put it off a little while--maybe until he comes home on a furlough sometime."
3. "Well maybe your mother can eventually see it your way, and you can get over this feeling."
4. "You know, marriage statistics show that your chances of a happy marriage are less when you marry at 17 than when you wait a little later. Many 17 or 18 ear olds are not emotionally or economically prepared for marriage."
5. "The conflict gets rather intense then, and it seems that leaving home might solve the problem."

PANEL FOR L-7

Read This and Refer to it as Needed

The nondirective approach to counseling typically stresses the use of Understanding (or Accepting) responses. In using this type of response an attempt is made to reflect the client's feelings and attitudes in order to show the client that what he is communicating is understood and accepted. The counselor is, in effect, asking "Is this what you mean?" "Is this how you feel?" "Is this how you see the situation?" The counselor is responding to how the client feels and not how he, the counselor, feels or views the client and the situation. That is, the counselor is responding to the "internal frame of reference," to the client's view of the reality of the situation.

Reflecting a client's feelings, however, is not an easy task--particularly since feelings are not usually verbally expressed. Also, simply because a response is in the form of an Understanding response does not mean feeling is being reflected. Because of the importance of the understanding response in nondirective and collaborative counseling, the counselor needs to refine his use of this response to avoid errors of communicating a different attitude than that intended.

There are four major types of error possible in attempting to make an Understanding response:

CONTENT --- A response too loaded with content
DEPTH ----- A response inappropriate in depth
MEANING --- A response inaccurate in meaning
LANGUAGE -- A response inappropriate in language

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